Complete Production Toolkit 2

Version 9.0

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Guide Part Number 9329-65037-00 REV A 9/10

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chapter 1

Introduction

The Complete Production Toolkit 2 for Pro Tools® provides additional features, plug-ins, and software options for music creation and post production.

Complete Production Toolkit 2 provides increased voice and track counts, and surround mixing, editing, and automation capabilities that are equal to Pro Tools HD.

For information on standard Pro Tools features, refer to the Pro Tools Reference Guide (Help > Pro Tools Reference Guide).

Complete Production Toolkit 2 Overview

Complete Production Toolkit 2 enables the following features in Pro Tools:

- Surround mixing, editing, and automation up to 7.1 (depending on the output capabilities of your audio interface)

Use the Neyrinck SoundCode™ Stereo down mixer plug-in for monitoring surround sessions in stereo with audio interfaces that have fewer than six outputs.

- Up to a total of 192 voiced audio tracks (up to 512 voiceable audio tracks)

Pro Tools with Complete Production Toolkit 2 displays of up to 512 tracks (192 voiceable)—tracks in excess the 192 voice limit are set to inactive.

  - Playback of up to or a combination of playing back *and* recording up to 192 mono tracks or 96 stereo tracks (192 available voices) at 44.1 kHz and 48 kHz
  - Playback of up to or a combination of playing back *and* recording up to 96 mono tracks or 48 stereo tracks (96 available voices) at 88.2 kHz and 96 kHz
  - Playback of up to or a combination of playing back *and* recording up to 48 mono tracks or 24 stereo tracks (48 available voices) at 176.4 kHz and 192 kHz
- Ability to use QuickPunch™ on up to 64 tracks
- Up to 160 Auxiliary Input tracks per session
- Up to 128 Instrument tracks
- Advanced Group dialog:
  - VCA assignments
  - Attributes tab
  - Follow globals
- Momentary Solo Latch Back/Forward commands
- Custom Shuttle Lock speeds

- Numeric Keypad set to Shuttle mode
- AutoFades
- Advanced editing features:
  - Continuous Scrolling
  - Scrub Trim tool
  - Replace Region command
  - TCE Edit to Timeline Selection command
  - Selection of alternate field recorder audio channels in the Pro Tools Timeline
  - Expanding alternate field recorder channels to new tracks
- Advanced automation features:
  - AutoJoin with Latch mode
  - Touch/Latch mode
  - Trim mode
  - Composite automation playlist
  - Copy track automation to sends
  - AutoMatch
  - Prime controls for writing automation in Latch mode
  - Glide automation
  - Trim automation
  - Write automation to Start, End, or All
  - Write automation to next breakpoint or punch point
  - Overwrite or extend Mute automation
  - Snapshot automation
  - Preview automation
  - Capture automation
  - VCA Master track automation
- Advanced video features:
  - Multiple video tracks
  - Multiple video playlists
  - Video editing
- Preferences
  - Back/Forward Amount
  - Shuttle
  - Auto Region Fade In/Out Length
  - Use Absolute Pan Linking
  - Suppress Automation "Write To" Warning
  - Allow Latch Prime in Stop
  - Coalesce when Removing Slaves from VCA Group
  - Standard VCA Logic for Group Attributes
  - Include Sends in Trim Mode
  - AutoGlide Time
  - Coalesce Trim Automation Options
- D-Control support
- D-Command support

For information about using D-Control and D-Command worksurfaces with Pro Tools, refer to the D-Command and D-Controls Guides, and the Pro Tools Reference Guide.

Additional Software

Complete Production Toolkit includes additional software for working with Pro Tools:

Neyrinck SoundCode Stereo For monitoring up to 7.1 surround sessions (down mixed to stereo) with all Pro Tools interfaces including 2 channel interfaces (such as the Mbox Mini). This plug-in also lets you quickly and easily create stereo mixes from up to 7.1 surround sessions.

X-Form™ Plug-In For high-quality time compression and expansion, and formant corrected pitch-shifting (based on the Radius® algorithm from iZotope).

System Requirements and Compatibility

To use Complete Production Toolkit 2, you need:

◆ An iLok USB Smart Key (an iLok.com account is also required for managing iLok licenses)

– and –

◆ An Avid-qualified Pro Tools system

Avid can only assure compatibility and provide support for hardware and software it has tested and approved.

For complete system requirements and a list of Avid-qualified computers, operating systems, hard drives, and third-party devices, visit:

www.avid.com/compatibility.

Registration

Your software purchase is automatically registered when you activate your iLok license (see "Authorizing Complete Production Toolkit 2" on page 6).

Registered users are eligible to receive software update and upgrade notices.

For information on technical support, visit:

www.avid.com.

Conventions Used in This Guide

All our guides use the following conventions to indicate menu choices and key commands:

Convention	Action
File > Save	Choose Save from the File menu
Control+N	Hold down the Control key and press the N key
Control-click	Hold down the Control key and click the mouse button
Right-click	Click with the right mouse button

The names of Commands, Options, and Settings that appear on-screen are in a different font.

The following symbols are used to highlight important information:

User Tips are helpful hints for getting the most from your Pro Tools system.

Important Notices include information that could affect your Pro Tools session data or the performance of your Pro Tools system.

Shortcuts show you useful keyboard or mouse shortcuts.

Cross References point to related sections in this guide or other Avid Guides.

About www.avid.com

The Avid website (www.avid.com) is your best online source for information to help you get the most out of your Pro Tools system. The following are just a few of the services and features available.

Product Registration Register your purchase online.

Support and Downloads Contact Avid Customer Success (technical support); download software updates and the latest online manuals; browse the Compatibility documents for system requirements; search the online Knowledge Base or join the worldwide Pro Tools community on the User Conference.

Training and Education Study on your own using courses available online or find out how you can learn in a classroom setting at a certified Pro Tools training center.

Products and Developers Learn about Avid products; download demo software or learn about our Development Partners and their plug-ins, applications, and hardware.

News and Events Get the latest news from Avid or sign up for a Pro Tools demo.

chapter 2

Installation and Authorization

Installing Complete Production 2 Toolkit

⚠ *A qualified version of Pro Tools must be installed before you install your toolkit and authorize its software components.*

To install Complete Production Toolkit 2:

1 Do one of the following:

- Download the installer for your computer platform from www.avid.com. After downloading, make sure the installer is uncompressed (.dmg on Mac or .ZIP on Windows).

– or –

- Insert the Pro Tools 9.0 Installer disc into your computer.

2 Locate and double-click the Complete Production Toolkit 2 installer icon:

- Install Complete Production Toolkit 2 (Mac)

– or –

- Complete Production Toolkit 2.exe (Windows)

3 Follow the on-screen instructions to complete the installation.

The installer installs the following plug-ins included with Complete Production Toolkit 2:

- Neyrinck SoundCode Stereo
- X-Form

Each software component (including Complete Production Toolkit 2) must be authorized before it can be used. See "Authorizing Complete Production Toolkit 2" on page 6.

Authorizing Complete Production Toolkit 2

Complete Production Toolkit 2 and its additional software components must be authorized before they can be used in Pro Tools.

Complete Production Toolkit 2 and Additional Software Components

Each Complete Production Toolkit 2 component must be authorized before it can be used in Pro Tools. Authorization includes activating your software licenses online, then transferring your licenses to an iLok USB Smart Key (iLok).

iLok USB Smart Key

An iLok can hold hundreds of licenses for all of your iLok-enabled software. Once a license for a given piece of software is placed on an iLok, you can use the iLok to authorize that software on any computer.

⚠ *An iLok USB Smart Key is not supplied with plug-ins or software options, but comes with new Pro Tools 9.0 systems or can be purchased separately.*

The following Complete Production Toolkit 2 software components must be authorized before they can be used in Pro Tools:

- Complete Production Toolkit 2 (includes Pro Tools features)
- Neyrinck SoundCode Stereo
- X-Form

Authorizing Downloaded Software

If you downloaded software from the Avid Store (http://shop.avid.com), you authorize it by downloading licenses from iLok.com to an iLok.

For more information, visit www.iLok.com.

Authorizing Boxed Versions of Software

If you purchased a boxed version of Complete Production Toolkit 2, it comes with an Activation Code (on the included Activation Card).

To authorize Complete Production Toolkit 2 using an Activation Code:

1 If you do not have an iLok.com account, visit www.iLok.com and sign up for an account.

2 Transfer the license for your toolkit option and plug-ins to your iLok.com account by doing the following:

- Visit www.avid.com/activation.

– and –

- Input your Activation Code (listed on your Activation Card) and then your iLok.com User ID. Your iLok.com User ID is the name you create for your iLok.com account.

3 Transfer the licenses from your iLok.com account to your iLok USB Smart Key by doing the following:

- Insert the iLok into an available USB port on your computer.
- Go to www.iLok.com and log in.
- Follow the on-screen instructions for transferring your licences to your iLok.

4 Launch Pro Tools.

5 If you have any installed unauthorized plug-ins or software options, you are prompted to authorize them. Follow the on-screen instructions to complete the authorization process.

Uninstalling Complete Production Toolkit 2 Software Option and Included Plug-Ins

Plug-ins included with Complete Production Toolkit 2 software can be removed from your system. The Complete Production Toolkit 2 feature set for Pro Tools is automatically enabled if a valid Complete Production Toolkit 2 authorization is detected on your iLok. To disable Complete Production Toolkit 2 on your system, transfer your Complete Production Toolkit 2 authorization to another iLok (or simply remove the authorized iLok from your system).

For information about transferring iLok licenses, see www.iLok.com.

Uninstalling Complete Production Toolkit 2 Components

Mac

To remove Complete Production Toolkit 2 plug-ins:

1 Locate and open the Plug-Ins folder on your Startup drive (Library/Application Support /Digidesign/Plug-Ins).

2 Drag the following plug-ins to the Trash:

- Neyrinck SoundCode Stereo
- X-Form

3 Empty the Trash.

Windows

To remove Complete Production Toolkit 2 plug-ins:

1 Choose Start > Control Panel.

2 Under Programs, click Uninstall a program.

3 Select the following plug-ins to uninstall from the list of installed applications:

- Neyrinck SoundCode Stereo
- X-Form

4 Click Uninstall.

5 Follow the on-screen instructions to remove the selected plug-ins.

chapter 3

Session and Track Features

Complete Production Toolkit 2 enables additional session and track features in Pro Tools.

For more information on working with Pro Tools sessions and tracks, see the Pro Tools Reference Guide.

Increased Voice and Track Counts

Support for Up to 192 Voices

Complete Production Toolkit 2 lets you play or record up to 192 voices simultaneously at 44.1 or 48 kHz, up to 96 voices at 88.2 or 96 kHz, and up to 48 voices at 176.4 or 192 kHz. Each channel of an audio track uses a single voice.

For example, at 44.1 or 48 kHz, you can have up to:

- 192 mono tracks

– or –

- 96 stereo tracks

– or –

- 32 5.1 tracks

– or –

- Any combination of mono, stereo, and surround tracks that do not require more that 192 voices for all audio channels

Maximum track counts are only supported with multiple hard drives and faster Avid-qualified systems. Visit our website for more information (www.avid.com).

Track Priority and Dynamic Voicing

Tracks do not play back when they are inactive or their voice assignment is set to Off.

When working with more than 192 voices (at 44.1 or 48 kHz), you can play back audio on a track that would use voice number 193 and higher by changing the higher track's priority, as follows:

- Make a lower numbered track inactive (click the Track Name and select Track > Make Inactive) to free up its voice.
- Set the voice assignment in a lower numbered track to Off (click the Voice selector and select Off).
- Drag the Track Name button of the higher numbered track to the left (Mix window) or upwards (in the Edit window or Track List) until it is in the range of the maximum number of voiced audio tracks allowed by your system. The previous last voiced audio track will now be out of range and its voice assignment will change to Off.

Setting a track voice assignment to Off

For the track that was originally higher numbered than the total allowed number of voiced audio tracks, its voice assignment was set to Off. When bringing it into the range of total allowed voiced tracks, it automatically resets to DYN.

For more information on track priority and voice assignments, see the Pro Tools Reference Guide.

Support for Up to 64 QuickPunch Tracks

With Complete Production Toolkit, up to 64 mono or stereo audio tracks at 44.1 or 48 kHz, and up to 48 tracks at 88.1 or 96 kHz can be simultaneously recorded with QuickPunch.

Additional Enhanced Session and Track Features

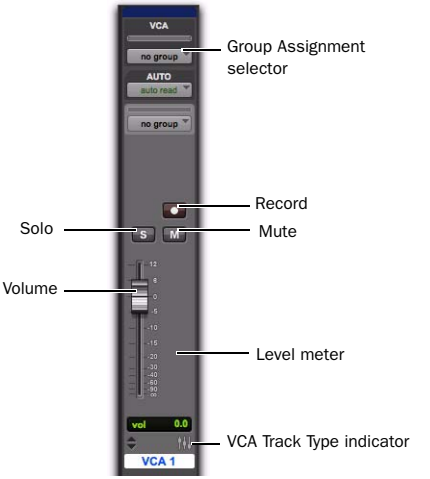
In addition to the increased audio track count (using up to 192 voices), Pro Tools with the Complete Production Toolkit 2 option includes the following:

- Support for up to 160 Auxiliary Input tracks
- Support for up to 128 Instrument tracks
- Display of up to 512 tracks (192 voiceable)—tracks in excess the 192 voice limit are set to inactive

VCA Master Tracks

VCA Master tracks emulate the operation of voltage-controlled amplifier channels on analog consoles, where a VCA channel fader would be used to control, group, or offset the signal levels of other channels on the console.

VCA Master tracks do not pass audio, so they do not have inputs, outputs, inserts or sends. A Mix group is assigned to a VCA Master track, which appears in the VCA track's Group Assignment selector. The controls of the tracks in that Mix group, called the *slave* tracks, are modified by the controls on the VCA Master.



VCA Master track

VCA Slave Track Control Indications

Unlike VCAs on traditional analog consoles, VCA Master tracks in Pro Tools directly affect their slave tracks, so that the controls on each slave track always show their actual values:

- The output level of each slave track is indicated by the position of its fader.
- The solo, mute, and record enable status of each slave track are indicated by the corresponding controls on the track.

This ensures that even when a VCA Master track is not visible, the true state of its slave tracks is accurately displayed.

VCA Slave Track Controls and Group Behavior

When a group is assigned to a VCA Master, the VCA-modifiable controls (Volume, Mute, Solo, and Record Enable) on its slave tracks, by default, do not follow any grouped behavior that may be set in the Attributes page of the Groups dialog. This lets you control the output levels of the group's member tracks while retaining the ability to adjust individual member track levels.

Slave tracks can be set to follow normal grouped behavior. See "Assigning Groups to VCA Masters" on page 12.

Common Uses for VCA Master Tracks

By grouping tracks in a Mix group and assigning that group to a VCA Master track, you can:

- Control the output levels of all the VCA group's member tracks without the need to bus them to an Auxiliary Input track or to the same output path
- Create multiple, nested VCA groups and control the output levels of multiple submixes at the same time
- Automate a submix by automating its VCA Master track

VCA Master Track Controls

The controls on a VCA Master track affect the corresponding controls on the slave tracks in its assigned Mix group. VCA Master tracks have the following controls:

Volume

The VCA Volume fader controls the Volume fader on audio, Auxiliary Input, Instrument, Master Fader, and other VCA Master tracks in a VCA-controlled group. (Volume faders on MIDI tracks are not affected.) Volume faders on slave tracks move to show the *composite level*, or the level on each track resulting from the position of the VCA Master Volume fader.

Mute

The VCA Mute button controls the mute state of audio, Auxiliary Input, Instrument, MIDI, and other VCA Master tracks in a VCA-controlled group. Muting a VCA-controlled group does not change the underlying mute state of slave tracks. (Mute buttons on slave tracks that were previously unmuted show an implicit mute.)

Solo

The VCA Solo button controls the solo state of audio, Auxiliary Input, Instrument, MIDI, and other VCA Master tracks in a VCA-controlled group.

- Soloing a VCA Master will implicitly mute all tracks except its slave tracks, thereby indirectly soloing the slave tracks.
- Soloing a VCA Master will clear any explicit solos on its slave tracks, leaving them indirectly soloed, and implicitly mute all other tracks.
- Explicitly soloing a slave track while its VCA Master track is soloed will override the VCA Master solo.

Record Enable

The VCA Record Enable button toggles the Record Enable status of only those audio, Instrument, and other VCA tracks that have already been record-enabled individually. You can then toggle record enable on and off for those tracks using the VCA Master Record Enable.

To temporarily force all slave tracks to toggle their record enable status:

- Option-click (Mac) or Alt-click (Windows) the Record Enable button on the VCA Master.

Level Meter

On VCA Master tracks, level meters indicate the highest level occurring on any of its individual tracks, not a summed level of all slave tracks.

The channel format of level meters on the VCA Master is set according to the channel formats of its slave tracks, as follows:

- If all slave tracks are the same channel format (mono, stereo or a multichannel format), the number of level meters on the VCA Master track is identical to that of the slave tracks.
- If the slave tracks are different formats, the number of level meters on the VCA Master track is set to one.

Record Enable and Slave Tracks

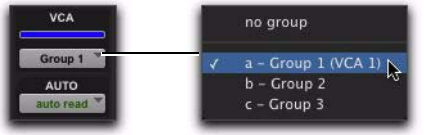
When a slave track is record-enabled (the Record Enable button is lit) or set to Input Only mode (the TrackInput button is lit), its automation is temporarily turned off, and its Volume fader is no longer affected by the VCA Master.

Assigning Groups to VCA Masters

An existing Mix group can be assigned to a VCA Master, or a new Mix group can be assigned to a VCA Master while it is being created. Only one group can be assigned to a VCA Master at a time. A VCA Master cannot control a group that includes itself.

To assign an existing group to a VCA Master:

- Click the Group Assignment selector on the VCA Master track and choose an available group from the pop-up menu.



Assigning an existing group to a VCA Master

To assign a new group to a VCA Master:

1 While creating a new group, select Mix or Mix/Edit as the Group type.

2 In the Group dialog, choose an available VCA Master track from the VCA pop-up menu.

Track Membership in Multiple VCA Groups

It is possible for a single slave track to be a member of more than one VCA-controlled group. In this case, the contribution of all VCA Master Volume faders is summed on the slave track. Mute, Solo, Record Enable, and TrackInput follow the same rules for enabling or disabling slave tracks.

Allowing Grouped Behavior of VCA Slave Track Controls

When a track is a VCA slave track, its Volume, Mute, Solo, Record Enable, and TrackInput controls follow VCA functions, and normally do not follow Mix group behavior.

However, these slave track controls can be set to allow Mix group behavior in addition to their VCA functions.

To allow grouped behavior of VCA-related controls on slave tracks:

1 Choose Setup > Preferences and click the Mixing tab.

2 In the Automation section, deselect the Standard VCA Logic for Group Attributes option.

3 Click OK.

Volume, Mute, Solo, Record Enable, and TrackInput are made available as Mix group attributes in the Group dialog.

Advanced Group Dialog

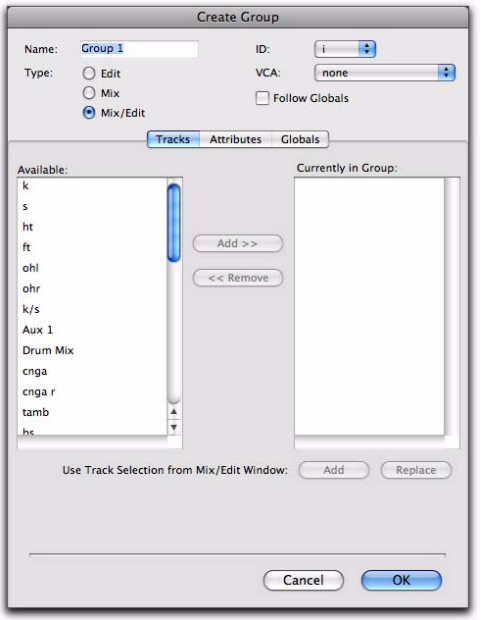
Whether you are creating or modifying groups with the Group List, a tracks's Group ID indicator, or the Track > Group menu command, you use the Groups dialog.

The Group dialog lets you create new groups and assign attributes to groups. In Pro Tools HD and Pro Tools with Complete Production Toolkit 2, the Group dialog has three pages:

Tracks Lets you add and remove tracks from the current group.

Attributes Lets you select which parameters are linked for the current Mix or Mix/Edit Group.

Globals Lets you select parameters to use as a template that can be applied to individual groups by selecting the Follow Globals option.



Group dialog (Pro Tools with Complete Production Toolkit 2)

Mix Groups

Mix Groups can be set to affect the following items:

- Main Mute
- Solo
- Send Level
- Send Mute
- Main Volume
- Main Pan
- Main LFE Level
- Record Enable
- Input Monitoring
- Automation Mode
- Send Pan
- Send LFE Level
- Plug-In Controls
- Plug-In Bypass

When the Main Pan attribute is enabled for groups, grouped behavior applies to the Link, Front inverse, Rear inverse and Front/Rear inverse controls in stereo and multichannel panner windows.

Mix Groups and VCA Masters

An existing Mix Group can be assigned to a VCA Master, or a new Mix Group can be assigned to a VCA Master while it is being created. Only one group can be assigned to a VCA Master at a time. A VCA Master cannot control a group that includes itself.

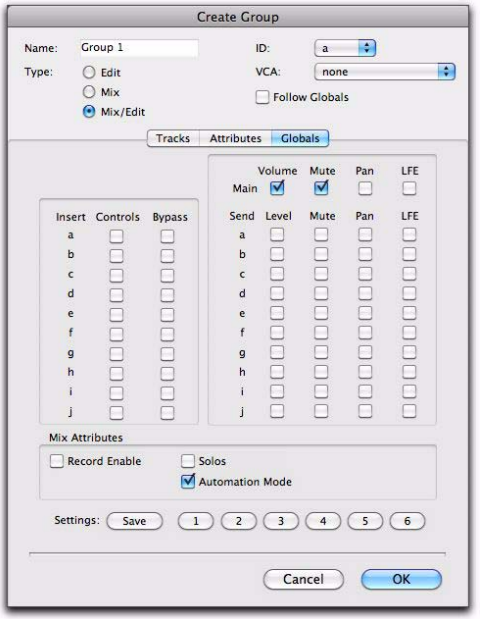
Setting Group Attributes

When creating a Mix Group or a Mix/Edit Group, you can select the Mix window parameters that will be linked for that group. These linked parameters are the *attributes* of the group.

You can select attributes in the Globals page and then set individual groups to follow the Global settings, or you can select attributes for groups individually.

To select attributes in the Global page:

1 While creating or modifying a group, click Globals in the Group dialog.



Globals page of Group dialog (Pro Tools with Complete Production Toolkit 2)

2 Select the base set of attributes for groups in your session.

3 Click OK to save the group and the new Globals settings.

To select attributes for an individual group:

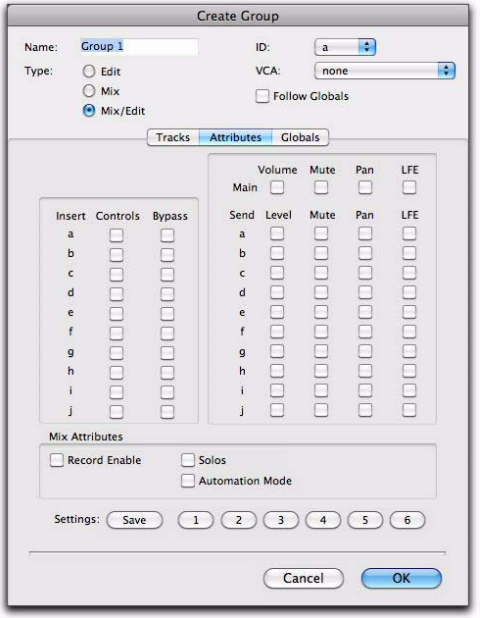
1 While creating or modifying a Mix Group or a Mix/Edit Group, do one of the following:

- Click Attributes in the Group dialog, and select the attributes you want to link.

– or –

- Enable Follow Globals to follow the base set of attributes. The Attributes page grays out to indicate that the group is following the selections in the Globals page.

2 Click OK to save the settings.



Attributes page of Group dialog (Pro Tools with Complete Production Toolkit 2)

Selecting Group Attributes

The following attributes can be selected for Global settings and for individual groups.

Track controls:

- Main Volume
- Main Mute
- Main Pan
- Main LFE Level
- Record Enable
- Solo
- Automation Mode

Send controls (Sends A–J):

- Send Level
- Send Mute
- Send Pan
- Send LFE Level

Insert controls (Inserts A–J):

- Plug-In Controls
- Insert Bypass

To select the attributes for a group, do any of the following:

▪ Select individual attributes by clicking their checkboxes.

▪ To select or deselect all attributes, Alt-Shift-click (Windows) or Option-Shift-click (Mac) any attribute.

▪ To select or deselect all attributes for a single Send or Insert (across a row), Start-click (Windows) or Control-click (Mac) any attribute in that row.

▪ To select or deselect attributes for a single control across all Sends, all Inserts, or for the four track controls (down a column), Alt-click (Windows) or Option-click (Mac) any attribute in that column.

Saving Group Attribute Presets

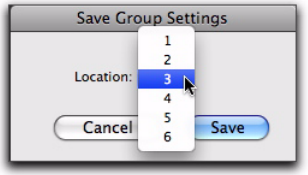
You can define six Group presets that can be recalled on either the Attributes or Globals page whenever you are creating or modifying a Mix or Mix/Edit Group.

To save the current attribute settings as a Group preset:

1 In the Groups dialog, click Save. (Follow Globals must be unchecked to save a setting from the Attributes page.)

Saving a Group preset

2 In the Save Group Settings dialog, select one of the six preset locations from the Location pop-up menu, and click Save.



Selecting a Group Settings Location

To save the current attribute settings directly to a preset location, Control-click (Windows) or Command-click (Mac) the preset button.

To recall a Group preset:

- Click the corresponding Preset button (1–6) in the Groups dialog. (Follow Globals must be unchecked to recall a setting in the Attributes page.)

Recalling a Group preset

Momentary Solo Latch Option

With Momentary Solo Latch enabled, Solo buttons are not sticky. A track is soloed only when its Solo switch is held down.

With a qualified control surface, additional tracks can be soloed by pressing their SOLO switches (as long as at least one Solo button is held down). When no SOLO switch is held down, all soloed tracks will unsolo.

To temporarily latch solos:

1 Choose Options > Solo Mode > Momentary.

2 Press and hold the Solo button on the first track that will be soloed.

3 While still holding the first Solo button, press additional Solo buttons. Solo buttons will remain soloed as long as one Solo button is held.

As long as at least one Solo button is held down, all the solos will remain latched.

Setting Playback Location with Back and Forward Commands

Pro Tools provides four Back/Forward commands (sometimes called "rollback") for moving the playback location in the Edit window.

You can also move the playback location in multiple increments by repeating the command (See "Repeating Back/Forward Commands" on page 18).

Back Moves the playback location backward by the Back/Forward Amount.

Back and Play Moves the current playback location backward by the Back/Forward Amount *and* automatically begins playback.

Forward Moves the playback location forward by the Back/Forward Amount.

Forward and Play Moves the current playback location forward by the Back/Forward Amount *and* automatically begins playback.

Setting the Back/Forward Amount

The length of the Back/Forward move is determined by the Back/Forward Amount preference in the Operation page (Setup > Preferences).

To configure the Back/Forward Amount:

1 Choose Setup > Preferences and click the Operation tab.

The timebase of the Back/Forward Amount settings follows the Main Time Scale by default, or you can deselect Follow Main Time and select any of the following timebase formats:

- Bars|Beats
- Min:Sec
- Time Code
- Feet+Frames
- Samples

2 Do one of the following:

- Select a preset amount in the Back/Forward Amount pop-up menu.

– or –

- In the Back/Forward Amount field, enter a custom amount.

Using Back or Forward Commands

To move the playback location backward by the Back/Forward Amount:

▪ Press Command (Mac) or Control (Windows), and click Rewind in the Transport window.

To move the playback location forward by the Back/Forward Amount:

▪ Press Command (Mac) or Control (Windows), and click Fast Forward in the Transport window.

To move the playback location backward by the Back/Forward Amount and then begin playback:

▪ Press Command+Option (Mac) or Control+Alt (Windows), and click Rewind in the Transport window.

To move the playback location forward by the Back/Forward Amount and then begin playback:

▪ Press Command+Option (Mac) or Control+Alt (Windows), and click Fast Forward in the Transport window.

Repeating Back/Forward Commands

All the Back/Forward commands can be repeated in order to increase the amount of the total Back or Forward move.

To repeat Back/Forward moves:

1 Press and hold Command (Mac) or Control (Windows).

2 Click Rewind or Fast Forward the number of times you want to repeat moving the playback location backwards or forwards by the specified Back/Forward Amount.

Extending Selections with Back or Back and Play Commands

The Back or Back and Play commands can be used to extend a selection backwards by the length of the specified Back/Forward Amount.

Although you cannot extend a selection with the Forward or Forward and Play commands, you can use the following procedures with Forward or Forward and Play to move the start point of a current selection.

To extend a selection with Back or Back and Play commands:

1 Specify the Back/Forward Amount. (See "Setting the Back/Forward Amount" on page 17.)

2 With the Selector tool, drag within a track to make a selection.

3 Do one of the following:

- To extend the selection backwards by the Back/Forward Amount, press Shift+Command (Mac) or Shift+Control (Windows) and click Rewind in the Transport window.

– or –

- To extend the selection backwards by the Back/Forward Amount and then begin playback, press Shift+Command+Option (Mac) or Shift+Control+Alt (Windows) and click Rewind in the Transport window.

Custom Shuttle Lock Speed

Use the Custom Shuttle Lock Speed preference to customize the highest fast-forward Shuttle Lock speed (key 9) to better match your editing and auditioning needs.

To configure Custom Shuttle Lock Speed:

1 In Pro Tools, select Setup > Preferences and click the Operation tab.

2 Be sure that the Numeric Keypad mode is set to Transport or Classic.

3 Enter a percentage for the Custom Shuttle Lock Speed setting. The range for this setting is 50–800%. You can use the Up and Down Arrow keys to increase or decrease the setting.

4 Click OK.

The Custom Shuttle Lock Speed setting is saved with your Pro Tools system preferences (not with the session).

To enable Custom Shuttle Lock Speed:

■ Press Start+9 (Windows) or Control+ 9 (Mac) on the numeric keypad.

Numeric Keypad Set to Shuttle

Pro Tools offers another form of shuttling, different from that of Shuttle Lock mode. With the Numeric Keypad mode set to Shuttle, playback of the current Edit selection is triggered by pressing and holding the keys on the numeric keypad—playback stops once the keys are released. Various playback speeds are available in both forward and reverse. In this mode, pre- and post-roll are ignored.

To shuttle with the Numeric Keypad mode set to Shuttle:

1 Choose Setup > Preferences and click the Operation tab.

2 Set the Numeric Keypad mode to Shuttle and click OK.

3 With the Selector tool, click in the track where you want playback to begin. To shuttle on two tracks, Shift-click in a second track.

4 Press and hold any of the following keys (or key combinations) on the numeric keypad to trigger playback.

Shuttle Speed	Rewind Key	Forward Key
1 X Speed	4	6
4 X Speed	7	9
1/4 X Speed	1	3
1/2 X Speed	4+5	5+6
2 X Speed	7+8	8+9

5 Press a different key to switch the playback direction or speed. Release to stop.

AutoFades

Pro Tools can automatically apply real-time fade-ins and fade-outs to all region boundaries in the session. Specify the duration (0 to 10 ms) for automatic real-time fades with the Auto Region Fade In/Out Length preference in the Operation Preferences page). These fade-ins and fade-outs are performed during playback and do not appear in the Edit window, and are not written to disk.

⚠ *AutoFades are not applied to AudioSuite processing.*

The automatic fade-in/out option also has an effect on Voice borrowing in a session. Whenever a lower-priority virtual track "pops thru" a silence in a higher-priority track on the same voice, a fade-in and fade-out is applied to the transition.

This feature is especially useful in post production situations such as dialogue tracking. For example, you can assign both a dialogue track and a "room tone" track with matching background to the same voice. You can then set the AutoFade option to a moderate length (4 ms or so) so that whenever a silence occurs in the dialog, playback switches smoothly to and from the background track without clicks or pops.

Using automatic fade-ins/outs saves you the trouble of editing to zero-crossings or creating numerous rendered fades in order to eliminate clicks or pops in playback. However, since these autofades are not written to disk, those clicks or pops still exist in the underlying sound file. Consequently, those anomalies still appear if the Duplicate AudioSuite plug-in or the Export Regions As Files command (from the Region List) are used to duplicate multiple regions as a continuous file. To render these real-time auto fades to disk, choose File > Bounce to > Disk.

To set the length of automatic fade-ins/outs:

1 Choose Setup > Preferences and click the Operation tab.

2 Type a value between 0 and 10 ms for the Auto Region Fade In/Out Length. A value of zero (the default) means that no auto-fading will occur.

3 Click OK. The AutoFade value is saved with the session, and is automatically applied to all free-standing region boundaries until you change it.

Preferences

Operation Preferences

Back/Forward Amount Sets the default length of Back, Back and Play, Forward and Forward and Play. The timebase of the Back/Forward Amount settings follows the Main Time Scale by default, or you can deselect the Follow Main Time Scale option and select another timebase format: Bars|Beats, Min:Sec, Time Code, Feet+Frames, or Samples.

Shuttle Selects a type of shuttling different from that of Shuttle Lock mode. With the Numeric Keypad mode set to Shuttle, playback is triggered by pressing and holding the keys on the numeric keypad—playback stops once the keys are released. Various playback speeds are available in both forward and reverse. You can also recall Memory Locations by typing Period (.), the Memory Location number, and Period (.) again.

Auto Region Fade In/Out Length Sets a default length for fade-ins and fade-outs automatically applied to region boundaries. Using automatic fade-ins and fade-outs saves you the trouble of editing to zero-crossings or creating numerous rendered fades in order to eliminate clicks or pops in playback. Autofades are not written to disk. Value range is from 0–10 ms for the Auto Region Fade In/Out Length setting. A value of zero means that no auto-fading will occur. The Auto Fade value is saved with the session, and is automatically applied to all free-standing region boundaries until you change it.

Mixing Preferences

Setup Section

Use Absolute Pan Linking This option affects behavior of grouped pan controls.

- When selected, grouped pan controls do not maintain relative offsets when any of the grouped pan controls is adjusted. All grouped pan controls snap to the absolute value of the adjusted control.
- When not selected, grouped pan controls maintain relative offsets when any of the linked controls is adjusted.

Automation Section

Suppress Automation "Write To" Warnings When selected, Pro Tools suppresses the warnings that appear after invoking any of the Write Automation To Start, Selection, End, or Punch commands and then stopping the transport.

Allow Latch Prime in Stop When selected and any tracks are in Latch mode, any automation-enabled controls on those tracks can be set to new values while the transport is stopped by touching or moving controls, to prepare for the next automation pass.

Coalesce when Removing Slaves from VCA Group This option determines the behavior when removing slave tracks from a VCA-controlled group.

- When selected, any automation on the VCA Master is automatically coalesced (without confirmation) to its slave tracks when the tracks are removed from the group.
- When not selected, a confirmation dialog lets you choose whether or not to coalesce the VCA Master automation to the slave tracks.

Standard VCA Logic for Group Attributes This option determines which Mix group attributes may be selected in the Group dialog when the group is assigned to a VCA Master.

- When selected, the Main Volume, Mute, Solo, and Record Enable controls on slave tracks follow the VCA Master only and are not available to be independently linked. (This emulates the behavior of analog console VCA masters.)
- When deselected, the Main Volume, Mute, Solo, and Record Enable controls follow the VCA Master, but also remain available for independent linking with groups.

Include Sends in Trim Mode This option determines the Trim status of Send faders when a track is put in Trim mode.

- When selected, Send faders go into Trim mode along with the Main Volume fader.
- When deselected, the Main Volume fader goes into Trim mode, but the Send fader stays in the corresponding standard Automation mode.

AutoGlide Time Specifies how quickly Pro Tools transitions (glides) from one automation value to another, when AutoGlide mode is used.

Coalesce Trim Automation Options

These options determine when Trim automation is committed to the main automation playlist on a track.

After Every Pass Sets Trim automation to coalesce when the transport is stopped at the end of each Trim automation pass. No Composite Playlist is indicated.

On Exiting Trim Mode Sets Trim Automation to coalesce on a track when the track is taken out of Trim mode. A Composite Playlist can be viewed before committing Trim moves.

Manually Trim Automation can be coalesced only with the Coalesce Trim Automation command. A Composite Playlist can be viewed before committing Trim moves.

chapter 4

Advanced Editing Features

Complete Production Toolkit 2 enables additional editing features in Pro Tools.

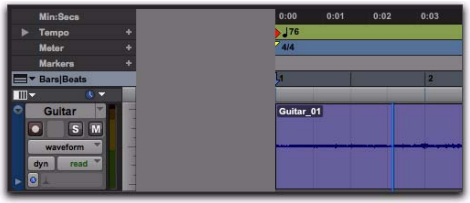
For information on editing in Pro Tools, see the Pro Tools Reference Guide.

Continuous Scrolling During Playback

When this scrolling option is selected, the Edit window's contents scroll continuously past the playback cursor, which remains in the center of the window. With this option, playback is always based on the Timeline selection (unlike the Center Playhead Scrolling option). Continuous Scrolling During Playback uses host processing power, so use this option with host-based Pro Tools systems only when absolutely necessary.

Half-Screen Edit Window

When the Scrolling option is set to Continuous, a half-screen appears at the far left of the Edit window (before the beginning of the session) when the Playhead is at the beginning of the session.



Half-screen for Continuous Scrolling option

Scrub Trimmer Tool

The Scrub Trimmer tool is a convenient tool for auditioning material (on up to two tracks) to find a trim point. You can drag in a track to hear the audio information, then trim at a specific location by releasing the mouse button.

This action creates a new region. Note that the Scrub Trimmer tool changes into a "right trim" or "left trim" shape as it is placed over the right or left side of a region. To reverse the direction of the Scrub Trimmer tool, press Alt (Windows) or Option (Mac) before you click the region.

Scrub Trimmer tool over a region

Scrub playback speed and direction vary with controller movement. Scrubbed audio is routed through the track signal path, so you hear any effects in the signal path.

To scrub trim a track:

1 Do one of the following:

- Click the Trimmer tool pop-up menu and select Scrub.

– or –

- Right-click on any track and select Tools > Trimmer Tools > Scrub.

The tool changes to a speaker with a bracket.

2 Drag within a track to the left or right. Audio from a scrubbed track is routed through the track signal path, including any TDM effects. When you locate the trim point, release the mouse button to trim the region.

To scrub trim two tracks, click with the Scrub Trimmer tool between two adjacent tracks and drag.

To scrub with finer resolution (without having to zoom in), press Control (Windows) or Command (Mac) while scrubbing.

Replacing Audio Regions

Use the Replace Region function to replace multiple instances of an audio region in a playlist with another region. This is useful in post production if you use a sound effect, room noise, or atmosphere region many times in a session, and later decide to replace one or all of the original regions with a different region.

This is also useful in music production if you want to replace a certain loop or sample (for example, a drum beat) with a new one. You can use this compositionally, if you know the tempo of a section or session, to create a scratch piece with "rough" regions of the correct length, and later replace them with "final" regions of the same length.

To replace regions by dragging and dropping:

1 Select a region in a track's playlist that you want to replace. The selection can extend beyond the region's end point, to include material from the replacement region that is longer than the original region.

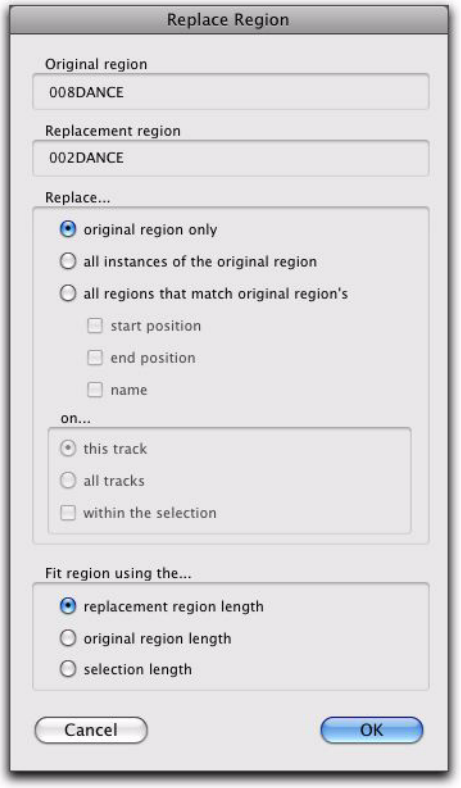
2 Control-Shift-drag (Windows) or Command-Shift-drag (Mac) the replacement region from the Region List to the selected region. The Replace Region dialog opens.

Control-Shift-drag (Windows) or Command-Shift-drag (Mac) any region from the Region List to any unselected region on a track to open the Replace Region dialog without first making a selection.

3 Configure the Replace Region dialog (see "Replace Region Dialog" on page 25).

4 Click OK.

Replace Region Dialog



Replace Region dialog

The following options are available in the Replace Region dialog:

Replace: Original Region Only Replaces only the selected region with the replacement region dragged from the Region List.

Replace: All Instances of the Original Region Replaces all instances of the selected region that fit the On criteria with the replacement region from the Region List.

- On This Track: replaces regions that fit the Match criteria and are on the same track as the original region.
- On All Tracks: replaces regions that fit the Match criteria for all tracks in the session.
- On Within the Selection: replaces regions that fit the Match criteria within the current selection.

Replace: All Regions That Match Original Region's Replaces all regions that fit the Match criteria and the On criteria with the replacement region from the Region List.

- Start Position: replaces all regions that have the same original *start* time as the selected region. This includes regions that may have been auto-created when trimming end points.
- End Position: replaces all regions that have the same original *end* time as the selected region. This includes regions that may have been auto-created when trimming start points.
- Name: replaces all regions that come from the same audio file and have been renamed to the same name
- On This Track: replaces regions that fit the Match criteria and are on the same track as the original region.
- On All Tracks: replaces regions that fit the Match criteria for all tracks in the session.
- On Within the Selection: replaces regions that fit the Match criteria within the current selection.

Region matching uses all specified Match criteria. For example, if you select Start Position and End Position, all regions from the same original audio file as your selection with the same original start and end times will be replaced.

Fit Region Using The: Original Region Length If the replacement region is smaller than the original region, the region is placed in the playlist and any remaining audio from the original region is removed.

If the replacement region is larger than the selection, it is placed in the playlist and trimmed to fit within the length of the original region.

Fit Region Using The: Original Selection Length When the playlist selection extends beyond the original region, the replacement region (if larger than the original region) is trimmed to fit within the selection.

Fit Region Using The: Replacement Region Length The replacement region is placed in its entirety, regardless of the length of the original region or selection.

Replacing Regions from the Region List

The Replace Regions command is also available in the Region List menu. To use this command, make sure there is a region selected in a track and a different (replacement) region selected in the Region List.

To replace regions using the Region List menu:

1 Select a region in a track to be replaced.

2 Do one of the following:

- Right-click the desired replacement region in the Region List and choose Replace Regions from the pop-up menu.
- Select the desired replacement region in the Region List and choose Replace Regions from the Region List menu. (If the Region List Selection Follows Edit Selection preference is enabled, Control-click (Windows) or Command-click (Mac) the selected region to deselect it, then Control-click (Windows) or Command-click (Mac) the desired replacement region to select it, and then choose Replace Regions from the Region List menu.)

3 Configure the Replace Region dialog (see "Replace Region Dialog" on page 25).

4 Click OK.

Replace Region and Multichannel Tracks

The Replace Region command supports dragging multichannel regions from the Region List to multichannel tracks, provided they are the same channel format. For example, you can replace a selected stereo region in a stereo audio track with another stereo region from the Region List. However, you cannot replace it with two mono audio regions. Additionally, you cannot replace regions in multiple mono tracks with multichannel regions.

TCE (Time Compression and Expansion) Edit To Timeline Selection

When the Edit and Timeline selections are unlinked, you can compress or expand an audio selection to fit the Timeline selection. On audio tracks, TCE Edit to Timeline Selection uses the TCE AudioSuite™ Plug-In selected in the Processing preferences. On Elastic Audio–enabled tracks, TCE Edit To Timeline Selection uses the track's selected Elastic Audio plug-in.

To fit an Edit selection to the Timeline:

1 Deselect Options > Link Timeline and Edit Selection.

2 With the Selector tool, select the audio material to be compressed or expanded.

3 In any Timebase ruler, select the time range where you want to fit the audio material.

4 Choose Edit > TCE Edit to Timeline Selection. The Edit selection is compressed or expanded to the length of the Timeline selection.

TCE Edit to Timeline Selection on Multiple Tracks and Channels

The TCE Edit to Timeline command can be used on multichannel selections, and selections across multiple tracks. All regions are compressed or expanded equally by the same percentage value, based on Edit selection range. This ensures that the rhythmic relationship between the different channels or tracks is maintained.

Fitting an Audio Region to an Edit Selection

Regions can be dragged from the Region List to fit within an Edit selection. The dragged region is compressed or expanded to fit within the selection. On audio tracks, fitting an audio region to the Edit selection uses the TCE AudioSuite Plug-In selected in the Processing preferences. On Elastic Audio–enabled tracks, it uses the track's selected Elastic Audio plug-in.

To fit an audio region to an Edit selection:

1 With the Selector tool, make an Edit selection in an audio track.

2 Control-Alt-drag (Windows) or Command-Option-drag (Mac) the region from the Region List to the track with the selection. The start of the region is positioned at the selection start, and the region is compressed or expanded to match the length of the selection.

Fit to Selection on Multiple Tracks and Channels

The Fit to Selection command supports dragging multiple regions from the Region List to multiple tracks, or multichannel tracks.

However, all dragged regions are compressed or expanded equally by the same percentage value, based on length of the region last clicked before dragging.

Expanding Alternate Channels to New Playlists or Tracks

When working with a mono region that is part of a multichannel recording imported from a field recorder, you can expand that region (or a selected portion of it) to new playlists that reflect its matching alternate channels while preserving any edits or fades.

For detailed information on working with multichannel recordings made with field recorders, see the Field Recorder Workflow Guide.

Conditions for Alternate Channel Availability

An alternate channel is available to replace the original channel (represented by the region or portion of a region selected on the Timeline) if all of the following are true:

- Both channels are part of a multichannel recording made simultaneously on one or more field recorders.
- Certain metadata matches between the original channel and the alternate channel.
- The metadata embedded during shooting and recording has been preserved prior to import into Pro Tools.

With multichannel recordings from one or more field recorders, both channels must overlap at least once between their start time code and end time code positions, and must also meet one of the following conditions:

- Matching Scene and Take
- Matching Shoot Date (applies only if Scene and Take contain any information for both channels)
- Matching Tape name
- Matching Sound Roll name
- Alternate channel Sound Roll name matches current channel Tape name
- Alternate channel Tape name matches current channel Sound Roll name

Expanding Channels to New Playlists

To expand alternate channels to new playlists:

1 In the Timeline, do one of the following:

- To expand only a portion of the regions on the track, make a selection that includes or overlaps any number of regions on a track, and Right-click (Windows or Mac) or Control-click (Mac) the selection.

– or –

- To expand all of the regions on the track, Right-click (Windows or Mac) or Control-click (Mac) the track name.

2 Choose the Expand to New Playlists pop-up menu, and select one of the following methods by which to expand alternate channels for the selection to new tracks:

- By Channel Name
- By Channel Number
- By Channel Name and Number
- By Time Code Only

If alternate channels are available, Pro Tools expands them to new playlists (including the channel represented in the original track) according to the selected option.

Expanding Channels to New Tracks

To expand alternate channels to new tracks:

1 In the Timeline, do one of the following:

- To expand only a portion of the regions on the track, make a selection that includes or overlaps any number of regions on a track, and Right-click (Windows or Mac) or Control-click (Mac) the selection.

– or –

- To expand all of the regions on the track, Right-click (Windows or Mac) or Control-click (Mac) the track name.

2 Choose the Expand Channels to New Tracks pop-up menu, and select one of the following methods by which to expand alternate channels for the selection to new tracks:

- By Channel Name
- By Channel Number
- By Channel Name and Number
- By Time Code Only

If alternate channels are available, Pro Tools expands them to new tracks (including the channel represented in the original track) according to the chosen parameters.

⚠ *It is not possible to rename files encoded with XML metadata. The file extension will always be .A1 and .A2 (even for stereo files). Also, it is not possible to rename files with a .L/.R suffix. As a result, Pro Tools does not always recognize these channels as a stereo pair.*

Expanding Channels by Time Code Only

The Expand To New Tracks By Time Code Only command lets you expand an entire track or only selected regions to new playlists on the same track or to new separate tracks, thus revealing all other regions recorded at the same time code location, regardless of channel name or number. This is especially useful when expanding edited guide tracks to original source audio that was recorded while referenced to time code, but where channel names or numbers were not written to the audio files.

Example Workflow: Working with a Guide Track for Live Concert Videos

1 Multitrack audio is recorded in Pro Tools while chasing time code. A mono or stereo mix is recorded simultaneously as a guide track for the video editor.

2 The picture and audio guide tracks are edited in a video editing application.

3 The edited audio guide tracks are exported from the video editor as an AAF (or OMF) sequence, including handles of at least 2 frames.

4 The AAF (or OMF) sequence is imported into Pro Tools as a new session. The original source audio files and unedited guide track are also imported into the session.

5 The original unedited guide track is relinked to the session (see "Relinking the Original Unedited Guide Track" on page 30).

6 The Pro Tools editor Right-clicks the name of the guide track and selects Expand Channels to New Tracks > By Time Code Only. The original source tracks expand to new tracks with edits and fades that match the guide track.

Relinking the Original Unedited Guide Track

After importing the AAF (or OMF) sequence and original source audio files into the session, it is recommended that you relink the edited guide track to the original unedited source audio.

To relink the original unedited guide track:

1 Open the Project Browser for the session and open the Audio Files folder.

2 Right-click the edited guide track audio file in the browser and choose Relink Selected.

3 In the upper pane of the Relink window, navigate to the original unedited guide track audio file that was recorded in Pro Tools.

If the original unedited file is not available, you can relink to any of the source audio files as long as they have the same start and end times as the guide track.

4 In the Select Files To Relink pane, select the edited guide track file.

5 Drag the original unedited guide track audio file into the Candidates pane. If a dialog appears stating that one or more files are shorter than the media file you are trying to relink, click Yes to select it for relinking anyway.

6 Check the box to the left of the file in the Candidates pane so that the Link icon appears.

7 Click Commit Links at the top of the Relink window and then close the Relink window.

8 You can now Right-click the name of the guide track and select Expand To New Tracks > By Time Code Only. All expanded tracks should be synchronous with the guide track.

chapter 5

Advanced Automation Features

Complete Production Toolkit 2 enables additional mixing and automation features in Pro Tools.

For more information on mixing and working with automation in Pro Tools, see the Pro Tools Reference Guide.

AutoJoin with Latch Mode

Pro Tools provides two different methods to resume writing automation on controls that were active at the point where the transport stopped:

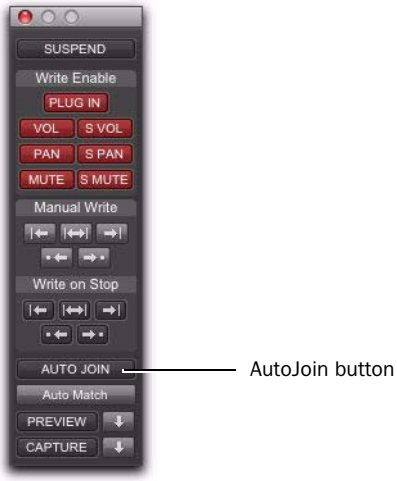
AutoJoin Lets you automatically resume writing automation in Latch mode.

Join Lets you manually resume writing automation in Latch mode. Join is available only with supported control surfaces.

To enable AutoJoin from Pro Tools:

1 Choose Window > Automation.

2 Click the AutoJoin button.

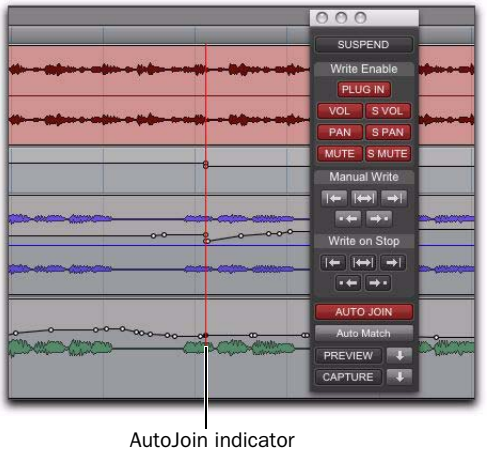


AutoJoin Enable button in the Automation window

See your control surface guide for details on using Join and AutoJoin with a control surface.

AutoJoin Indicator

After a Latch automation pass with AutoJoin enabled, the AutoJoin indicator appears in the Pro Tools Edit window.



AutoJoin indicator in the Edit window

The AutoJoin indicator is a vertical line that signifies the point where the last automation pass was stopped, and the point where the "join" will automatically occur on all tracks that were writing during that previous pass. When automation writing is resumed from this point, the line disappears.

⚠ *To use Join or AutoJoin to resume writing on controls that were writing when the transport stopped, restart the transport before the AutoJoin indicator.*

Touch/Latch Mode

Touch/Latch Automation mode places a track's Volume control in Touch mode and all other automatable controls in Latch mode.

In Touch/Latch mode, the Volume control follows Touch behavior, writing automation when touched and returning to previously written levels when released.

All other controls follow Latch behavior, writing automation when touched and continuing until playback stops, or until you punch out of writing automation.

Selecting Touch/Latch mode

Trim Mode

You can adjust (or *trim*) existing track volume and send level automation data in real time. Pan, mute and plug-in automation cannot be trimmed in this manner. Trim mode works in combination with the other Automation modes (Read, Touch, Latch, Touch/Latch, and Write) and is useful when you want to preserve all of your volume automation moves, but need to make levels a bit louder or softer to balance a mix.

When writing automation in Trim mode, fader moves write *relative* rather than *absolute* values. The existing automation data is changed by the amount of increase or decrease (or the *delta* value) indicated by the faders.

When Trim mode is enabled, non-trimmable controls behave in the same manner as in the standard Automation modes, with the exception of Write/Trim mode, where non-trimmable controls operate as in Touch mode.

Trim Automation Modes

When a track is in a Trim automation mode (except for Trim Off) its main Volume faders and all Send level faders are displayed in yellow. When trimming, a track's Volume indicator or Send Level indicator shows the delta value being written rather than the absolute value.

Behavior of the Trim Automation modes also depends on the Coalesce Trim Automation preference setting. See "Coalescing Trim Automation" on page 42.

Trim Off

Trim Off turns off reading and writing of all automation (main and trim) for a track. All automation moves are ignored during playback. Trim faders are temporarily set to zero when a track is set to Trim Off mode.

Depending on the Coalesce Trim Automation preference setting, changing a track to Trim Off can coalesce Trim automation on that track. See "Coalescing Trim Automation" on page 42.

Automation can be switched from Trim Off to another Automation mode during playback or record.

Read Trim

In Read Trim mode, Volume and Send level Trim faders are disengaged from the main automation playlist and follow any existing Trim automation. You can move a Trim fader during playback to audition new trim values, but no automation is written. When the Trim fader is released, it returns to any previously written Trim automation values.

If a track does not contain Trim automation, you can move a Trim fader during playback to audition new trim values, but no automation is written. The Trim fader retains its position until the track is removed from Trim mode, or if you manually coalesce the Trim level.

When this mode is enabled, non-trimmable controls (all controls other than track volume and send level) behave as if they are in regular Read mode—no automation data is written.

Touch Trim

In Touch Trim mode, Volume and Send level Trim faders are disengaged from the main automation playlist and follow any existing Trim automation. When a Trim fader is touched, writing of Trim automation begins. When the fader is released, writing stops and the fader returns to any previously written Trim automation values.

The rate of the fader's return to previous trim values is determined by the AutoMatch Time specified in the Automation Preferences page.

When this mode is enabled, non-trimmable controls (all controls other than track volume and send level) behave as if they are in regular Touch mode—they follow the previously written automation until touched. When they are touched, their absolute positions are written until the control is released or until playback stops.

Latch Trim

In Latch Trim mode, Volume and Send level Trim faders are disengaged from the main automation playlist and follow any existing Trim automation. When a Trim fader is touched, writing of Trim automation begins. Writing of Trim automation continues until playback stops, or until you punch out of writing automation.

When this mode is enabled, non-trimmable controls (all controls other than track volume and send level) behave as if they are in regular Latch mode—they follow the previously written automation until touched. When they are touched, their absolute positions are written until playback is stopped.

Touch/Latch Trim

In Touch/Latch Trim mode, Volume and Send level faders are disengaged from the main automation playlist and follow any existing Trim automation. The main Volume Trim fader follows Touch Trim behavior, and Send level Trim faders follow Latch Trim behavior.

Write Trim

In Write Trim mode, as soon as playback begins, writing of Trim automation begins for Volume and Send levels, and continues until playback stops, or until you punch out of writing automation.

When Write Trim mode is enabled, non-trimmable controls (all controls other than track volume and send level) are not in Write mode, but behave as if they are in *regular Touch mode* (no automation is written unless a control is touched). This is to prevent the controls from overwriting all of their automation data on every pass in Write Trim mode.

⚠ *The "After Write Pass, Switch To" preference affects Write Trim mode. After an automation pass in Write/Trim mode, tracks automatically switch to the Trim mode version of the setting specified by this preference.*

Send Levels and Trim Mode

You can set Pro Tools to exclude Send levels from Trim mode, so that only the Main Volume goes into Trim when a track is put into Trim mode. This gives you more flexibility in setting Send levels while in Trim mode.

To exclude Send levels from Trim mode:

1 Choose Setup > Preferences and click Mixing.

2 Under Automation, deselect Include Sends in Trim Mode.

⚠ *Any uncoalesced automation on a Send will still coalesce when the other automation on its track is coalesced, even if "Include Sends in Trim Mode" is deselected.*

3 Click OK.

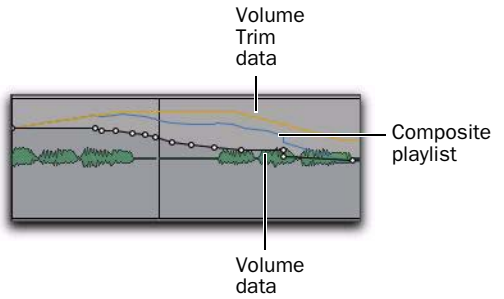
Composite Automation Playlist

If automation is not set to coalesce after every automation pass, you can display a composite automation playlist that shows the contribution of the Trim automation to the main Volume or Send Level automation data. This composite playlist display cannot be directly edited.

The composite playlist is shown in both the main automation playlist and the Trim automation playlist.

To display the composite playlist:

- Select View > Automation > Composite Playlist.



Display of Trim automation and the composite playlist in a main Volume playlist

Copy Track Automation to Sends

There may be times where you want a track's send settings or automation to mirror the settings or automation in the track itself, for example, when creating a headphone mix based on the main mix, or when an effect level needs to follow the levels in a main mix. You can copy the current settings or the entire automation playlist for the selected controls to the corresponding playlist for the send.

To copy a track's settings or automation to one of its sends:

1 Select the tracks you want to edit by clicking on the track names to highlight them.

2 Choose Edit > Automation > Copy to Send.

Copy To Send dialog

3 In the Copy to Send dialog, do any of the following:

- Select Current Value to copy the current settings of the corresponding controls.
- Select Automation to copy the entire automation playlist for the corresponding controls.

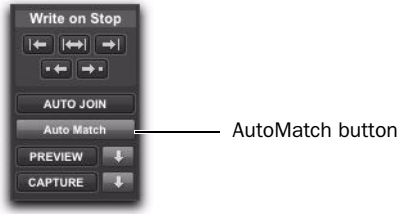
4 Select the controls you want to copy.

5 Select the sends to which to copy the automation, and click OK.

When overwriting automation, Pro Tools presents a confirmation dialog. To suppress this dialog, press Alt (Windows) or Option (Mac) while clicking OK.

You can undo the results of the Copy to Send command.

AutoMatch



AutoMatch button in the Automation window

AutoMatching All Controls

You can AutoMatch all currently writing controls to their existing automation levels.

To AutoMatch all currently writing controls:

1 Choose Window > Automation.

2 Make sure the automation types you want to AutoMatch are write-enabled.

3 Start playback.

4 When you reach a point in the track where you want to return control to their previously written values, click the AutoMatch button in the Automation window.

5 All currently writing controls stop writing automation and return to any previously written values according to the AutoMatch Time setting in the Mixing preferences.

AutoMatching Individual Tracks

You can invoke AutoMatch on individual tracks. All controls currently writing automation on the track stop writing and return to existing automation levels.

To AutoMatch all controls on a track:

- Control-click (Windows) or Command-click (Mac) the Automation Mode selector on the track.

AutoMatching Individual Automation Types

You can invoke AutoMatch on individual automation types across a session.

To AutoMatch all controls of one automation type:

- In the Automation window, Control-click (Windows) or Command-click (Mac) the button for the automation type (Volume, Pan, Mute, Plug-In, Send level, Send pan, or Send mute).

AutoMatching Individual Controls

(D-Control and D-Command Only)

On ICON worksurfaces, you can invoke AutoMatch on individual controls or control types on single channels.

To AutoMatch all controls of a type on a channel:

- Hold Control (Windows) or Command (Mac) and press any of the following in the Channel Strip Mode controls for the track whose controls you want to AutoMatch:
  - Inserts
  - Sends
  - Pan
  - Dyn (D-Control only)
  - EQ (D-Control only)

To AutoMatch a pan control or the controls for an individual insert or send:

1 Press the switch in the Channel Strip Mode controls to display the Pan controls or the top level of Inserts or Sends for the channel.

2 Hold Control (Windows) or Command (Mac) and press the Rotary Encoder Select switch for the control you want to AutoMatch:

- For Sends, the Send level, pan, and mute will AutoMatch.
- For Inserts, all automated controls will AutoMatch.
- For Pan, all pan sliders on the channel will AutoMatch.

To AutoMatch all controls for a plug-in displayed in the Dynamics or EQ section:

▪ Hold Control (Windows) or Command (Mac) and press the Auto switch in the Dyn or EQ section of the console.

Prime Controls for Writing Automation in Latch Mode

If a track is in Latch or Touch/Latch automation mode, you can prime individual controls for writing automation while the transport is stopped. This *Latch Prime* capability lets you prepare for an automation pass before starting playback.

To prime controls for writing automation in Latch mode while the transport is stopped:

1 Choose Setup > Preferences and click Mixing.

2 Under Automation, select Allow Latch Prime in Stop.

3 Click OK to close the Preferences window.

4 In the Automation window, make sure the controls you want to automate are write-enabled.

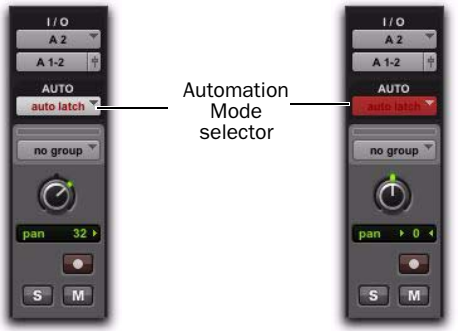
5 Click the Automation Mode selector on the track where you want to write automation and do one of the following:

- Choose Latch mode to allow priming of all automation-enabled controls on the track.

– or –

- Choose Touch/Latch mode to leave the main Volume fader in Touch mode and allow priming of all other automation-enabled controls.

6 While the transport is stopped, touch or move the controls you want to start writing at the beginning of the automation pass. When at least one control on a track is primed, the Automation Mode selector displays in red.



Automation mode indicator before (left) and after priming of latched controls (right)

7 Start playback. All primed controls begin writing automation at their primed values.

8 Stop playback to finish the automation pass. All tracks are taken out of their Latch Prime state.

You can use the Write to Punch command at the end of your automation pass to write the current value back to the start of the pass.

Taking Tracks and Controls Out of Latch Prime

You can take individual tracks or automation types out of their Latch Prime state before or during an automation pass.

◆ When you take a track or automation type out of Latch Prime before starting playback, it stays in Latch mode but the corresponding controls are not primed to write when playback starts.

◆ When you take a track or automation type out of Latch Prime during an automation pass, the corresponding controls AutoMatch to their currently written values.

◆ If you AutoMatch a control that is in a Latch Prime state, the control will no longer be primed.

To take a track out of Latch Prime:

▪ Control-click (Windows) or Command-click (Mac) the Automation Mode selector on the track.

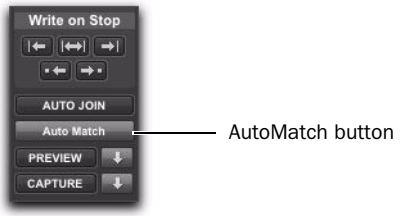
The selector button unbolds to indicate that the track is no longer primed.

To take all tracks out of Latch Prime, do one of the following:

▪ Alt-Control-click (Windows) or Option-Command-click (Mac) the Automation Mode selector on a track.

– or –

▪ Click the AutoMatch button in the Automation window.



AutoMatch button in the Automation window

To take all selected tracks out of Latch Prime, do one of the following:

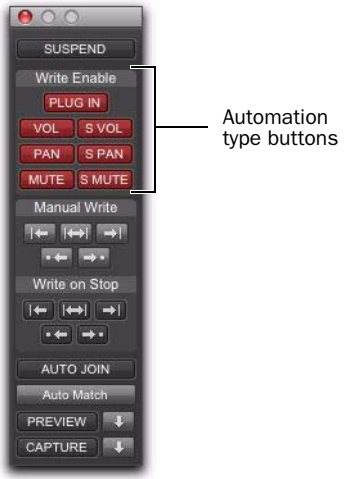
▪ Alt-Control-Shift-click (Windows) or Option-Command-Shift-click (Mac) the Automation Mode selector on a track.

– or –

▪ Alt-Shift-click (Windows) Option-Shift-click (Mac) the AutoMatch button in the Automation window.

To take an automation type out of Latch Prime on all tracks, do one of the following:

- In the Automation window, Control-click (Windows) or Command-click (Mac) the button for the automation type (Volume, Pan, Mute, Plug-In, Send level, Send pan, or Send mute).



Automation types in the Automation window

Rolling Through Automation Punch Points in Latch Prime

After you prime controls for writing automation while the transport is stopped, you can set Pro Tools to automatically punch in at that point after issuing a back and play command, or after rolling back and locking to time code.

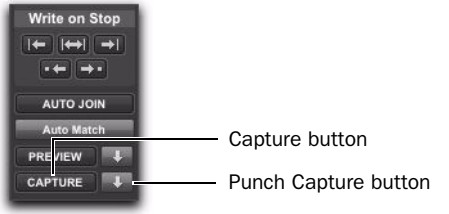
To set Pro Tools to automatically punch in automation writing on a track:

1 Locate the cursor where you want to punch in automation.

2 Prime controls for writing while the transport is stopped. (See "Prime Controls for Writing Automation in Latch Mode" on page 38.)

3 In the Automation window, click the AutoJoin button.

4 In the Automation window, click the Capture button and then click the Punch Capture button. The AutoJoin marker (a vertical red line) appears on-screen at the punch point.



Capture and Punch Capture buttons in the Automation window

5 Issue a Back and Play command, roll back the external machine to before the punch in point, or enable pre-roll.

6 Start playback. When the transport reaches the punch-in point, automation writing begins.

Glide Automation

The Glide Automation commands let you manually create an automation transition (or glide) from an existing automation value to a new one, over a selected area.

When gliding multiple parameters at the same time, such as with the Surround Panner or plug-ins, use the Edit > Automation > Glide to All Enabled option.

For MIDI automation, Glide To commands only apply to MIDI Volume, MIDI Pan, and MIDI Mute. MIDI parameters cannot use the Write To commands.

To apply a Glide Automation to the current automation parameter type:

1 In the Automation window, make sure the automation type is write-enabled.

2 Click the Track View selector to choose the automation type you want to automate.

3 Drag with the Selector tool in the track to select the area you want to write the glide to.

4 Change the automation parameter to the value you want at the end of the selection. For example, to glide automation volume to –Infinity, move the Volume fader to –Infinity.

5 Choose Edit > Automation > Glide to Current.

You can also press Alt+Forward Slash (/) (Windows) or Option+Forward Slash (/) (Mac).

To do a Glide Automation to all current enabled parameters:

1 In the Automation window, make sure the automation types are write-enabled.

2 In each track you want to automate, click the Track View selector and select from the pop-up menu the automation type you want to automate.

3 With the Selector tool, drag horizontally to include all the tracks you want to automate in a selection (drag vertically to define the time range).

4 In each track you want to automate, change the automation parameter to the value you want at the end of the selection.

5 Choose Edit > Automation > Glide to All Enabled.

You can also press Alt+Shift+Forward Slash (/) (Windows) or Option+Shift+Forward Slash (/) (Mac).

Glide Automation Considerations

When Glide Automation is applied to automation data, it behaves as follows:

- When a selection is made, automation breakpoints are written at the start and end points of the Glide Automation. The automation value at the start of the selection is the start point of the Glide Automation and the end of the selection is the end point of the Glide Automation. The Glide Automation that is created between the two is based on the length of the selection and the end value that is selected.
- If automation breakpoints follow the selection, they are not changed, but the value selected for the end of the selection is written from the end point up until the next breakpoint.
- If no automation breakpoints follow the selection, the value selected for the end of the selection is written to the end of the track.
- If no selection is made, a breakpoint is written to the current location, and the value selected for the Glide Automation is written to the next breakpoint.

Trim Automation

If you have already written automation, you can modify automation data for track volume and send levels in real time by using Trim mode. When a track is trim-enabled, you are not recording absolute fader positions, but relative changes in the existing automation. See "Trim Mode" on page 33 for more information.

To enable Trim mode:

- In the Mix or Edit window, click the Automation Mode selector of the track where you want to trim automation, and select Trim.

Enabling Trim mode

When a track's Trim mode is enabled, its Volume and Send Level faders turn yellow, and its Automation Mode selector is outlined in yellow. This outline appears solid if the track is trim-enabled, and flashes whenever trimming is occurring on the track's volume or send levels.

Writing Trim Automation

The writing of Trim automation depends on how it is set to be coalesced. See "Coalescing Trim Automation" on page 42. If automation is not set to coalesce after every automation pass, Trim automation moves are written to a separate Trim playlist.

To trim track Volume or Send levels:

1 In the Automation window, make sure the automation type (Volume or Send level) is write-enabled.

2 Click the Automation Mode selector of the track where you want to write automation and choose the automation mode (Touch, Latch, Touch/Latch, or Write).

3 Click the Automation Mode selector and select Trim.

4 Start playback, and adjust the Volume or Send levels.

5 Stop playback to finish the Trim pass.

Coalescing Trim Automation

You can set Pro Tools to commit, or *coalesce*, Trim automation to the main automation playlist by the following methods:

After Every Pass Trim moves are automatically applied when the transport is stopped at the end of an automation pass. Trim automation playlists are cleared, and Trim faders are returned to zero.

On Exiting Trim Mode Trim moves are stored separately in the Trim automation playlist until they are coalesced. Trim automation is automatically coalesced on a track only when you take the track out of Trim mode. You can repeat an automation pass, edit Trim automation manually on any of the Trim playlists, or clear Trim automation before coalescing with this method.

Even when automation is set to coalesce on exiting Trim mode, you can use the Coalesce Trim Automation command to commit Trim moves at any time.

Manually Trim moves are stored separately in the Trim automation playlist until they are coalesced. With this setting, the only way to coalesce Trim moves is with the Coalesce Trim Automation command. You can repeat an automation pass, edit Trim automation manually on any of the Trim playlists, or clear Trim automation before coalescing with this method.

To set the method by which Trim Automation is coalesced:

1 Choose Setup > Preferences and click Mixing.

2 Under Coalesce Trim Automation, select one of the following:

- After Every Pass
- On Exiting Trim Mode
- Manually

To coalesce Trim automation on a track when exiting Trim mode:

1 Choose Setup > Preferences and click Mixing.

2 Under Coalesce Trim Automation, select On Exiting Trim Mode.

3 Click OK to close the Preferences window.

4 Make sure the Pro Tools transport is stopped.

5 On the track where you want to coalesce Trim automation, click the Automation Mode selector and deselect Trim.

The Trim automation is applied to the main automation playlist, Trim automation playlists are cleared, and Trim faders are returned to zero.

⚠ *If transport is playing and you are writing automation, you cannot directly enter or exit Trim mode. You must AutoMatch before exiting Trim mode. This prevents any abrupt jumps in automation values.*

To manually coalesce Trim automation on a track:

1 Select the track where you want to coalesce the Trim automation.

2 Do one of the following:

- Choose Track > Coalesce Trim Automation.

– or –

- Right-click the track name and choose Coalesce Trim Automation.

The Trim automation is applied to the main automation playlist, Trim automation playlists are cleared, and Trim faders are returned to zero.

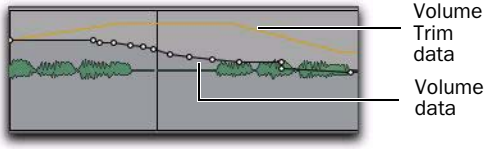
Trim Automation with the Main Playlist

The appearance of Trim automation depends on how it is set to be coalesced. See "Coalescing Trim Automation" on page 42.

If automation is not set to coalesce after every automation pass, you can display Trim automation data along with the main Volume or Send level automation data in the same automation view. This Trim automation display cannot be directly edited.

To display the Trim automation playlist along with main automation playlist on tracks:

- Select View > Automation > Trim Playlist.



Display of Trim automation in a main Volume playlist

Suspending Trim Automation

To suspend Trim automation on all tracks:

- In the Automation window, Command-click (Mac) or Control-click (Windows) the Suspend button.

The Suspend button highlights yellow to indicate that Trim automation is suspended.

To suspend Trim automation for individual controls on a track:

1 In the Edit window, set the Track View selector to show the automation playlist for the Trim control you want to suspend (Volume Trim or Send level Trim).

2 Do one of the following:

- To suspend only the displayed Trim control on a single track, Control-click (Windows) or Command-click (Mac) the control name in the Track View selector.

– or –

- To suspend the displayed Trim control on all tracks, Control-Alt-click (Windows) or Command-Option-click (Mac) the control name in the Track View selector.

Clearing Trim Automation

If Trim automation has not been coalesced on a track, you can clear it. When you clear Trim automation, automation breakpoints on all Trim playlists are deleted and all Trim faders are reset to zero.

To clear Trim automation:

1 Select the track where you want to clear the Trim automation.

2 Do one of the following:

- Choose Track > Clear Trim Automation.

– or –

- Right-click the track name and choose Clear Trim Automation.

Write Automation to the Start, End, or All of a Track or Selection

Pro Tools lets you write current automation values from any insertion point forward (or backward) to the end (or beginning) of a track or Edit selection in a track, or to an entire track or Edit selection, while performing an automation pass.

Write Automation to Start, End, and All buttons in the Automation window

The standard Write Automation to Start, All, or End commands do not operate when the Pro Tools transport is stopped. It only affects automation for those parameters that are currently write-enabled and currently writing automation data.

Optionally, Write Automation to Start, All, and End can be configured to always be applied automatically (see "Writing Automation to the Start, End or All of a Track or Selection on Stop" on page 46).

⚠ *For MIDI automation, the Write To commands only apply to MIDI Volume, MIDI Pan, and MIDI Mute.*

Requirements for Standard Write Automation Commands

For automation data to be written for a specific parameter, the associated track must be in one of the following Automation modes and meet the following conditions:

Latch Mode The control for the parameter must be changed (touched) during the automation pass.

Touch Mode The control for the parameter must be changed (touched).

Write Mode All controls on that track must be in Write mode.

This command can be undone.

To write current automation values to the start, end, or all of a track or Edit selection:

1 Choose Window > Automation.

2 Make sure that the automation type is write-enabled.

3 Do one of the following:

- Click in a track at an insertion point.

– or –

- Drag with the Selector tool to select a portion of the track.

4 Start playback.

5 Make sure you are actively writing on the appropriate track if you are in Latch or Touch mode.

6 When you reach a point in the track or selection that contains the automation data you want to apply, click the Write Automation to Start, All, or End button in the Automation window.

7 Stop playback. The current values of all write-enabled automation at that point are written to the corresponding area of the track/selection.

Write to Start, End or All and Trim Mode

While in Trim mode, it is also possible to write trim delta values for track volume and send levels to the start, end or all of a track or Edit selection.

To write current trim delta values to the start, end, or all of a track or selection:

1 Choose Window > Automation.

2 Make sure the automation type (track volume or send level) is write-enabled.

3 In the Mix or Edit window, click the Automation Mode selector of the track you want to trim automation, and select Trim. The track Volume and Send Level faders turn yellow.

4 Do one of the following:

- Click in a track at an insertion point.

– or –

- Drag with the Selector tool to select a portion of the track.

5 Click Play to begin playback.

6 When you reach a point in the track or selection that contains the trim setting (delta value) you want to apply, click the Write Automation to Start, All, or End button in the Automation window.

7 Stop playback.

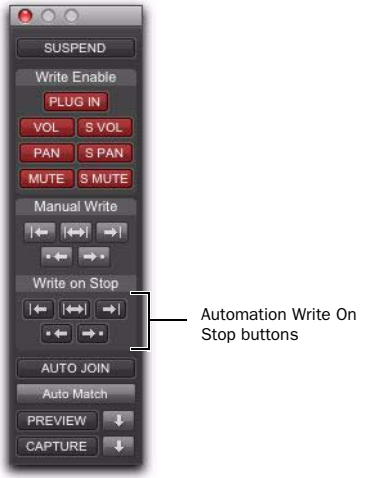
The relative changes to the track volume and send levels at that point are written to the corresponding area of the track/selection.

Writing Automation to the Start, End or All of a Track or Selection on Stop

The Automation window provides options for writing automation on any automation playlist (including Trim playlists) after a valid automation pass has been performed.

The Write Automation to Start, End, or All modes can be configured to disable or remain enabled after a valid automation pass.

See "Requirements for Standard Write Automation Commands" on page 45.



Write On Stop controls in the Automation window

To configure Write on Stop modes to disable after an automation pass:

1 Choose Window > Automation.

2 Click to enable one of the Write On Stop modes (Start, All, End).

The enabled Write on Stop arrow appears in blue.

To configure Write on Stop modes to remain enabled after an automation pass:

1 Choose Window > Automation.

2 Alt-click (Windows) or Option-click (Mac) one of the Write On Stop buttons (Start, All or End) to enable the Write On Stop mode.

The enabled Write on Stop arrow appears in red.

Write Automation to the Next Breakpoint or to the Punch Point

While performing an automation pass, Pro Tools lets you write current automation values from the current insertion point forward to the next automation breakpoint, or back to the punch point (the location in the track where automation writing started).

◆ Write Automation to Next Breakpoint lets you update automation within a track without overwriting automation located earlier or later in the Timeline, and without having to define a selection before editing automation.

◆ Write Automation to Punch Point lets you fill back an automation value within a track after finding the right level or setting during an automation pass, without having to go back and repeat the pass.

Like the standard Write Automation to Start, End, and All commands, the Write Automation to Next Breakpoint and Write Automation to Punch Point commands do not operate when the Pro Tools transport is stopped. They only affect automation for those parameters that are currently write-enabled and currently writing automation data.

⚠ *For MIDI automation, the Write To commands only apply to MIDI Volume, MIDI Pan, and MIDI Mute. Other MIDI parameters cannot use the Write To commands.*

Optionally, the Write Automation to Next Breakpoint and Write Automation to Punch Point commands can be configured to be applied automatically after a valid automation pass has been performed. See"Writing Automation to the Next Breakpoint or to the Punch Point on Stop" on page 49.

Write Automation to Next Breakpoint and Write Automation to Punch Point have the same requirements as Write Automation to Start, End and All commands. See "Write Automation to the Start, End, or All of a Track or Selection" on page 45.

To write current automation values to the next breakpoint:

1 Choose Window > Automation.

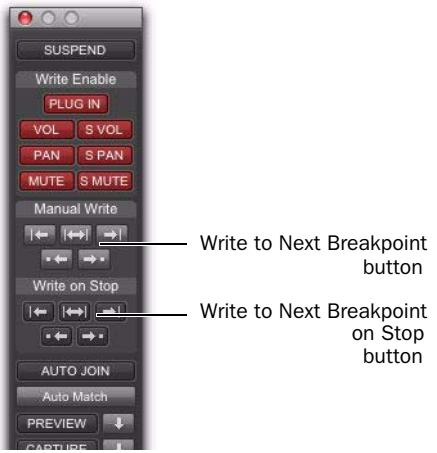
2 Make sure that the automation type is write-enabled.

3 Click in a track to define an insertion point.

4 Start playback.

5 Make sure you are actively writing on the appropriate track if you are in Touch, Latch, or Touch/Latch mode.

6 When you reach a point in the track where you want to apply the current settings, click the Write Automation to Next Breakpoint button.



Write To Next Breakpoint buttons in the Automation window

7 Stop Playback.

The current values of all controls being written at that point are written up to the next breakpoint.

⚠ *Write Automation to Next Breakpoint remains enabled after a valid automation pass. Unlike standard Write Automation commands, it cannot be configured to disable after an automation pass.*

To write current automation values back to the automation punch point:

1 Choose Window > Automation.

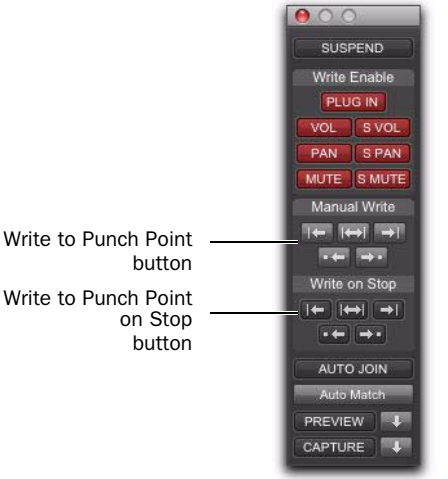
2 Make sure the automation type is write enabled.

3 Click in a track to define an insertion point.

4 Start playback.

5 Make sure you are actively writing on the appropriate track if you are in Touch, Latch, or Touch/Latch mode.

6 When you reach a point in the track where you want to apply the current settings, click the Write Automation to Punch Point button.



Write To Punch Point buttons in the Automation window

The current values of all write-enabled parameters are written back to the point where the first control began writing automation.

Write To Next Breakpoint or Punch Point and Trim Mode

While in Trim mode, it is also possible to write trim values for track volume and send levels to the next written breakpoint or back to the automation punch-in point.

To write current trim values to the next breakpoint or to the punch point:

1 Choose Window > Automation.

2 Make sure that the automation type (track volume or send level) is write-enabled.

3 In the Mix or Edit window, click the Automation Mode selector and select Trim. The track Volume and Send Level faders turn yellow.

4 Click in a track to define an insertion point.

5 Start playback.

6 When you reach a point in the track where you want to apply the current trim values, click the Write Automation to Next Breakpoint button in the Automation window.

To write current trim values to the punch point:

1 Choose Window > Automation.

2 Make sure that the automation type (track volume or send level) is write-enabled.

3 In the Mix or Edit window, click the Automation Mode selector and select Trim. The track Volume and Send Level faders turn yellow.

4 Click in a track to define an insertion point.

5 Start playback.

6 When you reach a point in the track where you want to apply the current trim values, click the Write Automation to Punch Point button in the Automation window.

Writing Automation to the Next Breakpoint or to the Punch Point on Stop

The Automation window provides an option for automatic Write Automation to Next Breakpoint on Stop or Write Automation to Punch Point on Stop.

⚠ *Write Automation to Next Breakpoint remains enabled after a valid automation pass. Unlike standard Write Automation commands, it cannot be configured to disable after an automation pass.*

To configure Write Automation to Next Breakpoint on Stop:

1 Choose Window > Automation.

2 Click the Write Automation to Next Breakpoint on Stop button or the Write Automation to Punch Point button.

When this option is enabled, automation writing will be performed automatically forward to the next breakpoint after a valid automation pass has been performed.

To configure Write Automation to Punch Point on Stop:

1 Choose Window > Automation.

2 Click the Write Automation to Punch Point on Stop button.

When this option is enabled, automation writing will be performed automatically back to the automation punch-in point after a valid automation pass has been performed.

Guidelines for "Write To" Commands

Using "Write To" Commands During Playback

You can carry out any of the Write Automation To commands without stopping the Pro Tools transport. On supported control surfaces, the corresponding "Write To" button flashes until you stop the transport.

While the Pro Tools transport is moving, issuing Write Automation To commands affects writing of automation in the following ways:

- Write to Start/Selection Start: Currently writing controls continue writing automation
- Write to All/Selection: Currently writing controls (except controls in Write mode) punch out of writing automation
- Write to End/Selection End: Currently writing controls (except controls in Write mode) punch out of writing automation
- Write to Next Breakpoint: Currently writing controls (except controls in Write mode) punch out of writing automation
- Write to Punch point: Currently writing controls continue writing automation

⚠ *For MIDI automation, the Write To commands only apply to MIDI Volume, MIDI Pan, and MIDI Mute. MIDI parameters cannot use the Write To commands.*

Applying "Write To" Commands to Selected Tracks

The Write Automation To commands normally apply to all tracks currently writing automation. It is possible to apply these commands to selected tracks only.

To apply any of the "Write Automation To" commands to currently selected tracks:

1 Select the tracks where you want to apply the Write To commands.

2 Alt-Shift-click (Windows) or Option-Shift-click the corresponding "Write Automation To" button.

Suppressing Warnings when Using "Write To" Commands

When you carry out any of the Write Automation To commands (except Write to Next Breakpoint), Pro Tools posts a dialog warning that automation values will be changed in the session. You can suppress these warnings.

To suppress "Write To" warning dialogs:

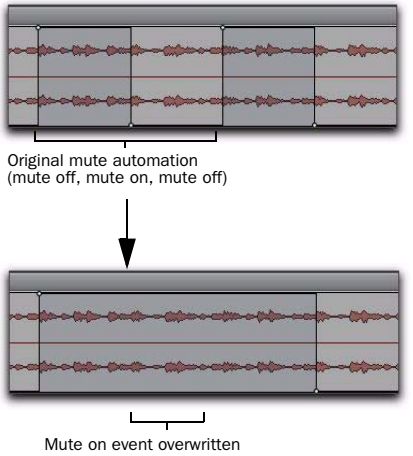
1 Choose Setup > Preferences and click Mixing.

2 Under Automation, select Suppress Automation "Write To" Warnings.

Overwrite or Extend Mute Automation

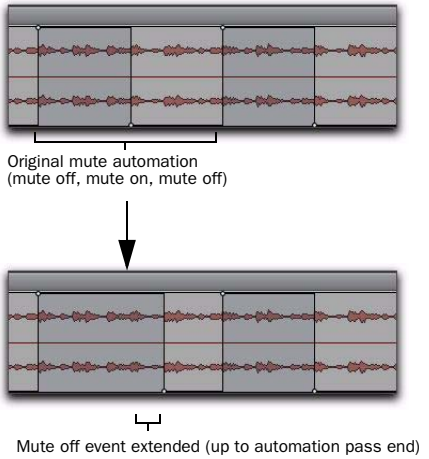
Pro Tools lets you overwrite or extend an existing mute event in real time, without changing the current mute state.

A mute event can be overwritten when the automation pass begins before the first mute event and ends after the second event. In this case, the current on/off state of the mute is maintained.



Overwriting a mute automation event

A mute event can be extended when the automation pass begins before an on or off event and stops before the end of the second event.



Extending a mute automation event

Mute Overwrite/Extend is supported in Touch and Latch mode, as follows:

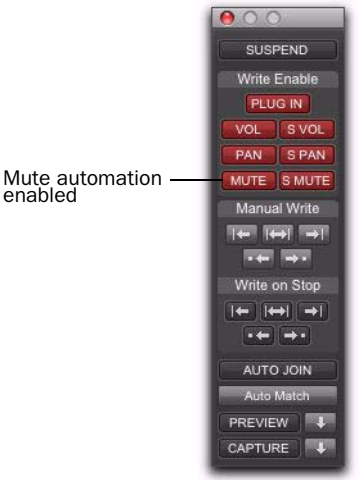
Touch Mode Writes the current state as long as the Mute button is held.

Latch Mode Writes the current state until you stop or AutoMatch out.

To overwrite a mute state on one or more tracks:

1 Choose Window > Automation.

2 Make sure Mute is write-enabled.



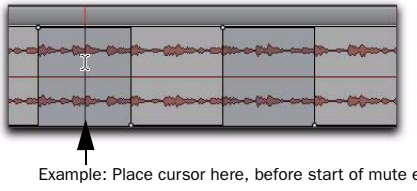
Mute enable button in the Automation window

3 In the Mix or Edit window, click the Automation Mode selector of the track where you want to overwrite the mute state, and set the Automation mode to Touch or Latch mode.

To overwrite mute states on multiple tracks, set all tracks to the same Automation mode.

4 In each track you want to automate, click the Track View selector and select mute.

5 Place the cursor before the start of the mute event you want to overwrite.



Placing the cursor before the start of a mute event

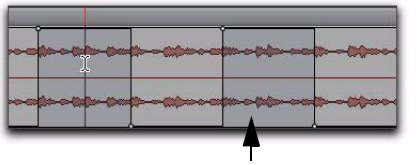
6 Start playback.

7 Press Control (Windows) or Command (Mac) and the track Mute button before the start of the mute event you want to overwrite.

To overwrite mute states on multiple tracks, press Alt+Control (Windows) or Option+Command (Mac) and the Mute button on one of the tracks to be automated.

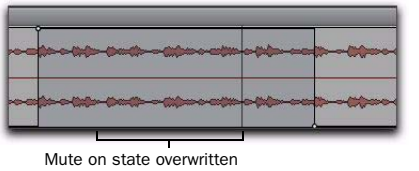
8 After the end of the second mute event, release the key and the Mute button.

With Touch mode, you have to hold the Mute button for the duration of the write.



Stopping automation after the end of a mute event

9 When you have finished the automation pass, stop playback.



Example of mute state overwritten

To extend a mute state on a track:

1 Choose Window > Automation.

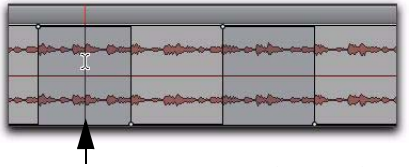
2 Make sure mute is write-enabled.

3 In the Mix or Edit window, click the Automation Mode selector of the track you want to automate, and select Touch or Latch mode.

To extend mute states on multiple tracks, set all tracks to the same Automation mode.

4 In each track you want to automate, click the Track View selector and select mute.

5 Place the cursor before the start of the mute event you want to extend.



Example: Place cursor here, before start of mute event

Placing the cursor before the start of a mute event

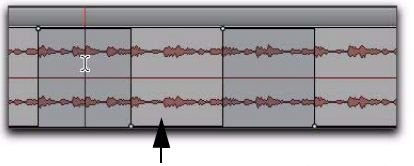
6 Start playback.

7 Press Control (Windows) or Command (Mac) and the track Mute button before the start of the mute event you want to extend.

To extend mute states on multiple tracks, press Alt+Control (Windows) or Option+Command (Mac) and the Mute button on the track.

8 Before the end of the second mute event, release the key and the Mute button.

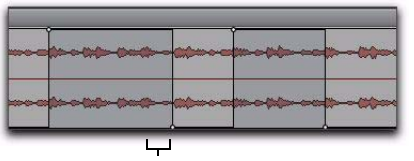
If you extend past the subsequent on or off event, the entire event will be changed.



Example: Stop automation pass here, before end of mute event

Stopping automation before the end of a mute event

9 When you have finished the automation pass, click Stop.



mute off state extended (up to automation pass end)

Example of mute state extended

Snapshot Automation

You can write automation data values for multiple parameters in a single step. You can write snapshot automation in two ways:

To a Selection Automation data is written to the Timeline selection (as well as the Edit selection if linked). Anchor breakpoints are placed just before and after the selection so that data outside the selection is not affected.

To a Cursor Location Automation data is written at the insertion point. After the insertion point, the automation ramps to the next breakpoint value, or if no breakpoints exist, remains at the newly written value for the remainder of the session.

⚠ *For MIDI automation, the Write To, Trim To, and Glide To commands only apply to MIDI Volume, MIDI Pan, and MIDI Mute. MIDI parameters cannot use the Write To commands.*

For more information on cutting, copying, and pasting automation data within a session, see "Write Automation to the Start, End, or All of a Track or Selection" on page 45.

To write snapshot automation:

1 In the Automation window, make sure that the parameters you want to edit are write-enabled. Deselect any parameters whose automation you want to preserve.

2 In the Edit window, click the Track View selector to show the automation you want to edit.

3 Write a breakpoint in the playlist if none currently exists, as follows:

- Place the cursor in the playlist (or make an Edit selection), then choose Control+Forward Slash (/) (Windows) or Command+Forward Slash (/) (Mac).

– or –

- Select the Grabber tool and click anywhere in the playlist.

4 Do one of the following:

- Select an area in the track's playlist (or within multiple tracks) where you want to apply the automation.

– or –

- Place the cursor at an Edit insertion point.

5 Adjust the controls you want to automate. You can also change a plug-in preset.

6 Choose Edit > Automation and do one of the following:

- To write the current value to only the currently displayed automation parameter, choose Write to Current.

– or –

- To write the current settings for all automation parameters enabled in the Automation window, choose Write to All Enabled.

Adding Snapshot Automation to Empty Automation Playlists

When you use a Write Automation command on an automation playlist with no previously written automation data, the selected value is written to the entire playlist and not just the selected area.

This is because a playlist with no automation data contains only a single automation breakpoint that corresponds to the current position of the control for the parameter. The position of the breakpoint is updated whenever the parameter value is changed.

If you do not want the Write Automation command to write the selected automation value to the entire playlist, you can:

- Anchor the automation data by placing the cursor at the end of the session (or any other end point) and choosing Write to Current.

  – or –

- Click with any Grabber tool on each side of the selection.

This lets the Write Automation command write only to the selected area.

Writing Snapshot Automation over Existing Automation Data

When you move the playback cursor, the automated controls in Pro Tools update to reflect the automation data that is already on the track. To keep the settings you have made for a snapshot, you can suspend automation parameters to prevent them from updating.

To write snapshot automation over existing data:

1 In the Automation window, make sure that the automation parameters you want to edit are write-enabled. Deselect any parameters whose automation you want to preserve.

2 Adjust the controls for the parameters you want to automate.

3 Click the Automation Mode selector and select Off mode for the tracks where you want to apply the automation.

4 With the Selector, select the range where you want to apply the automation.

5 Choose Edit > Automation and select one of the following from the submenu:

- To write the current value to only the automation parameter currently displayed in the Edit window, choose Write to Current.

– or –

- To write the current settings for all automation parameters enabled in the Automation window, choose Write to All Enabled.

6 Click the Automation Mode selector and select Read mode for the tracks you want to play back with automation.

Capturing Automation and Applying it Elsewhere

The Write Automation commands can also be used to capture automation states at specific locations in a track and apply them to other locations in the track.

To capture and apply automation:

1 In the Automation window, make sure that the automation parameters you want to edit are write-enabled. Deselect any parameters whose automation you want to preserve.

2 Click the Automation Mode selector and select Read mode for the tracks that have automation you want to capture.

3 Ensure that Options > Link Timeline and Edit Selection is selected.

4 With the Selector tool, select the location where you want to capture automation. All automated controls update to reflect the automation at that location. (If you make a selection, the controls update to reflect the automation at the beginning of the selection.)

5 In each track you want to apply the captured automation, click the track's Automation Mode selector and set the Automation mode to Off.

6 With the Selector tool, select the location where you want to apply the automation.

7 Enable the automation parameters previously suspended.

8 Choose Edit > Automation and select one of the following from the submenu:

- To write the current value to only the automation parameter currently displayed in the Edit window, choose Write To Current.

– or –

- To write the current settings for all automation parameters enabled in the Automation Enable window, choose Write To All Enabled.

9 Click the Automation Mode selector and select Read mode for the tracks you want to play back with automation.

Snapshot Automation and Trimming of Automation Data

Pro Tools lets you use trim values as snapshots and apply the *relative* changes (delta values) to the selected automation by using the Trim Automation command. This works in much the same way as the Write Automation command, except that it writes delta values instead of absolute values to automation data.

You can use trim values in writing snapshot automation to any automatable parameter.

To create a snapshot of relative changes in automation data:

1 In the Automation window, make sure that the automation parameters you want to edit are write-enabled. Deselect any parameters whose automation you want to preserve.

2 Select the area of the track you want to edit. All automated controls update to reflect the automation at the beginning of the selection.

3 Move the controls for the parameter up or down by the amount you want to change the data.

4 Choose Edit > Automation and do one of the following:

- To write the current delta value to only the currently displayed automation parameter, choose Trim to Current.

– or –

- To write the current delta value for all automation parameters enabled in the Automation window, choose Trim to All Enabled.

Preview Automation

Automation Preview mode lets you audition changes to a mix and compare them to existing automation values without committing them to the automation playlist.

When you put Pro Tools in Automation Preview mode, you can preview values for automation-enabled controls on any track that is in a writable automation mode.

While in Automation Preview mode, when you touch or move a control, it *isolates* the control, disengaging it from its automation playlist. The control stops reading or writing automation, allowing you to freely audition changes.

When you have found a level or state that you want to use, you can then commit or *punch* the previewed value to the automation playlist for the isolated controls.

◆ If you punch during playback, the automation mode is set to Latch and writing begins at the preview value.

◆ If you punch while the transport is stopped, the automation mode is set to Latch and the control is primed at the preview value.

It is not necessary for the Allow Latch Prime in Stop preference to be enabled for Preview to put a control into Latch Prime.

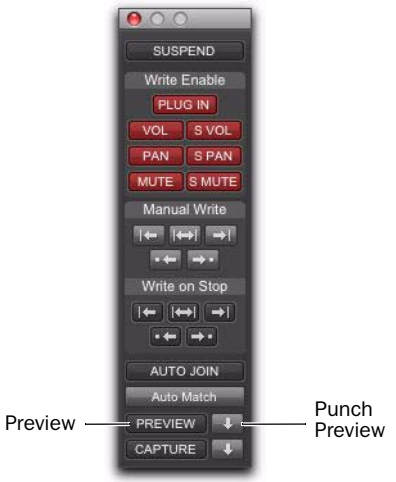
Previewing New Automation Values

To preview a new automation value for a control:

1 Make sure the track where you want to preview the value is enabled for automation (Touch, Latch, Touch/Latch or their corresponding Trim modes).

2 Make sure the automation type you want to preview is enabled in the Automation window (Volume, Pan, Mute, Send level, Send pan, Send mute, or Plug-In).

3 Click the Preview button in the Automation window. The button lights green to indicate that Preview mode is active.



Preview controls in the Automation window

4 To isolate a control, touch or move an automation-enabled control.You can isolate controls during playback or while the transport is stopped.

The Automation Mode indicator on the track lights green to indicate that at least one of its controls is isolated, and the Punch Preview button in the Automation window lights to indicate a preview value is available to punch.

5 Start playback and adjust the isolated control to audition the changes.

Taking Controls Out of Isolated State

You can take controls out of their isolated state without leaving Preview mode.

To take all controls on a track out of their isolated state, do one of the following:

- Control-click (Windows) or Command-click (Mac) the automation mode selector on the track.

– or –

- Change the track automation mode to Read or Off.

To take all controls of an automation type out of their isolated state:

- In the Automation window, disable the automation type.

Isolating Multiple Controls

In some cases, such as when starting a new mix, you may want to isolate multiple controls at the same time.

To isolate all currently write-enabled controls:

- Alt-click (Windows) or Option-click (Mac) the Preview button.

To isolate all write-enabled controls on all selected tracks:

- Alt-Shift-click (Windows) or Option-Shift click (Mac) the Preview button.

Suspending Preview Mode

You can temporarily suspend Preview mode, allowing you to toggle between preview values and existing automation.

To suspend Preview mode:

- Control-click (Windows) or Command-click (Mac) the Preview button.

Punching Preview Values

After you have isolated a control and auditioned a new value, you can punch (write) the value to the automation playlist.

To punch a preview value to the automation playlist:

- Click the lit Punch Preview button.

Preview Mode and "Write To" Commands

The Write Automation To commands work as follows with Preview mode:

Before Punching Preview Values The Write Automation To commands (except Write to Next Breakpoint) can be used to extend previewed values. The Write Automation To command will only apply to isolated controls. Pro Tools remains in Preview mode.

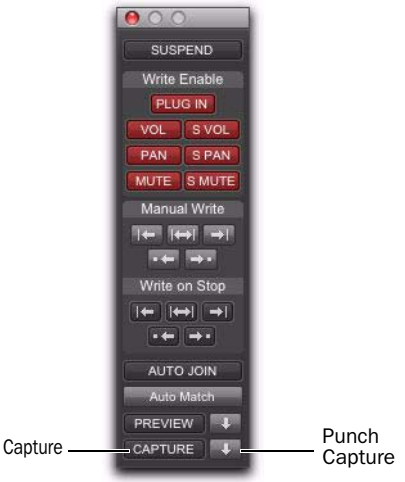
After Punching Preview Values The Write Automation To commands (except Write to Next Breakpoint) can be used to extend the punched value in the same manner as other automation.

Capture Automation

You can capture current automation values at one location in a session and quickly apply them in another location with the Capture and Punch Capture commands. The Capture command temporarily stores the value of all controls currently writing automation, and the Punch Capture commands writes those stored values to all enabled automation types.

◆ ICON Systems allow for the capture of up to 48 different values, or *snapshots*.

◆ All other systems allow for the capture of a single value.



Capture controls in the Automation window

Capturing Automation Values

You can capture the current automation values of actively writing controls.

To capture automation values:

1 Make sure all tracks whose automation values you want to capture are in a write-enabled state (Write, Touch, Latch, Touch/Latch or Latch).

2 Make sure the automation types you want to capture are enabled in the Automation window (Volume, Pan, Mute, Send level, Send pan, Send mute, or Plug-In).

3 Start playback. When you reach a location where you want to capture the current automation states, click the Capture button in the Automation window.

The Punch Capture button in the Automation window lights to indicate a captured value is available to punch.

Punching Captured Automation Values

After automation values are captured, they can be punched (written) to another location in the track. Any tracks set to Read or Off are unaffected.

◆ If you punch during playback, the automation mode of any track set to Touch is set to Latch and writing begins at the captured value.

◆ If you punch while the transport is stopped, the automation mode of any track set to Touch is set to Latch and the control is primed at the captured value.

To punch captured automation values:

1 Move to a location where you want to apply the captured automation states. You can do this during playback or while the transport is stopped.

2 Click the Punch Capture button in the Automation window to apply the captured automation states. The captured states are applied to all automation types that are currently enabled in the Automation window.

Capturing Automation Values for All Controls

You can capture the state of all automatable controls (except on tracks with their Automation Mode set to Off) in a session, regardless of whether they are currently writing automation.

To capture the automation values of all controls:

▪ When you reach a location where you want to capture the current automation states, Alt-click (Windows) or Option-click (Mac) the Capture button.

To capture the automation values of all controls on selected tracks only:

▪ When you reach a location where you want to capture the current automation states, Alt-Shift-click (Windows) or Option-Shift-click (Mac) the Capture button.

Punching Automation Values for All Controls

You can punch all captured automation values to another location on their corresponding tracks (except those tracks with their Automation Mode set to Off).

To punch the automation values of all controls:

- When you reach a location where you want to apply the captured automation states, Alt-click (Windows) or Option-click (Mac) the Punch Capture button. Any track set to Read or Touch are set to Latch. Any tracks set to Off are unaffected.

To punch the automation values of all controls on selected tracks only:

- When you reach a location where you want to apply the captured automation states, Alt-Shift-click (Windows) or Option-Shift-click (Mac) the Punch Capture button. Any selected tracks set to Read or Touch are set to Latch. Any selected tracks set to Off are unaffected.

Capture and Trim Mode

The Capture and Punch Capture commands work with Trim automation in the same way as regular automation. Pro Tools saves Trim status when capturing, so if you attempt to punch captured Trim values while displaying a non-Trim automation playlist, Pro Tools will automatically apply the values to the corresponding Trim playlist.

Punch Capture and "Write To" Commands

After issuing a Punch Capture command, the affected controls are writing automation (in Latch mode), so any of the Write Automation To commands can be used to extend the punched value in the same manner as other automation.

Capture and Preview Mode

Loading Captured Values into Preview

You can preview and modify captured automation values in Preview mode before punching the values to the automation playlist.

To capture an automation value and use it to preview:

1 Make sure the track where you want to preview the value is enabled for automation (Touch, Latch, Touch/Latch or their corresponding Trim modes).

2 Make sure the automation type you want to preview is enabled in the Automation window (Volume, Pan, Mute, Send level, Send pan, Send mute, or Plug-In).

3 Capture an automation value that you want to preview in another location on a track. (See "Capturing Automation Values" on page 60.)

4 Go to a location where you want to preview the captured automation states, and click the Preview button in the Automation window.

5 Click the Punch Capture button.

The affected controls are isolated and updated to the captured values. The Punch Preview button in the Automation window lights to indicate the preview value is available to punch.

6 Start playback and adjust the isolated control to audition the changes.

7 When you are ready to punch the preview value to the automation playlist, click the lit Punch Preview button.

Capturing Values While in Preview Mode

When you are in Preview mode, you can capture the values of isolated controls and apply them elsewhere on a track. By capturing preview values, you can leave the underlying automation unchanged at the place where you capture.

On ICON systems, you can use preview mode to capture multiple snapshots without changing automation.

To capture a preview value:

1 Activate Preview mode and isolate a control. (See "Previewing New Automation Values" on page 58).

2 Start playback and adjust the isolated control to audition the changes.

3 When you are ready to capture preview value, click the Capture button in the Automation window.

The Punch Capture button in the Automation window lights to indicate a captured value is available to punch.

VCA Master Track Automation

Displaying Automation on VCA Master Tracks

The following controls on VCA Master tracks can be automated and have separate automation playlists:

- Volume
- Volume trim
- Mute

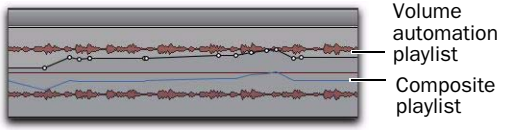
These automation playlists follow the same behavior as automation playlists on other track types.

Displaying the Composite Automation Playlist on Slave Tracks

When a track is a VCA slave, you can display a composite automation playlist that shows the contribution of the VCA Master to the Volume or Mute automation data on the slave track. This composite playlist reflects the actual position of the Volume fader on the slave track.The composite playlist display cannot be directly edited.

To display the composite playlist on VCA slave tracks:

- Select View > Automation > Composite Playlist.



Viewing composite automation on a VCA slave track

Excluding VCA Slave Tracks from VCA Master Automation

When you are writing automation on a VCA Master track, the corresponding moves will appear on the composite automation playlist of each of its slave tracks. If you want to exclude a slave track from an automation pass, write-enable the slave track for automation.

To exclude a slave track from VCA Master track automation pass:

1 Write-enable the VCA Master track for automation (Write, Touch or Latch mode).

2 Write-enable the slave track you want to exclude for automation (Write mode).

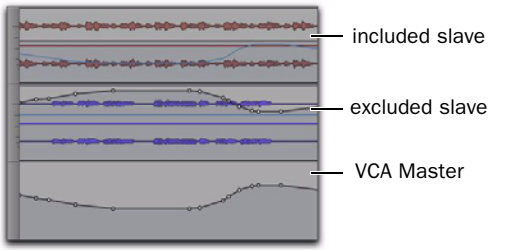
3 Make sure other slave tracks that you want to include in the pass are not write-enabled for automation.

4 Start playback.

5 Move the fader on the VCA Master track.

6 Stop playback.

Automation is written on the excluded slave track such that the fader moves on the VCA Master track are canceled out, and the fader on the excluded slave track does not move on subsequent playback.



Automation for excluded VCA slave track, canceling VCA Master automation

Coalescing VCA Automation

There are several ways to commit, or *coalesce*, the contribution of a selected VCA Master track's Volume and Mute automation to the automation playlists of its slave tracks.

Clearing the VCA Master

You can use a VCA Master to write grouped automation, coalesce the VCA automation to all of the slave tracks, and clear the automation on the VCA Master. The coalesced tracks will play back exactly as they did when they were in the VCA group.

To coalesce automation from a VCA Master to all of its slave tracks and retain the VCA Master:

1 Select the VCA Master track whose automation you want to coalesce.

2 Do one of the following:

- Choose Track > Coalesce VCA Master Automation.

– or –

- Right-click the VCA Master track name and choose Coalesce VCA Master Automation.

The composite Volume level and Mute state are coalesced to each of the slave tracks. The VCA Master Volume fader is reset to zero, the VCA Mute is set to unmuted, and any automation on the VCA Master is cleared.

Deleting the VCA Master

You can temporarily use a VCA Master to write grouped automation, then coalesce the VCA automation to all of the slave tracks by deleting the VCA Master. The coalesced tracks will play back exactly as they did when they were in the VCA group.

To coalesce automation from a VCA Master to all of its slave tracks and delete the VCA Master track:

1 Select the VCA Master track whose automation you want to coalesce.

2 Choose Track > Delete.

The composite Volume level and Mute state are committed to each of the slave tracks.

⚠ *This action cannot be undone.*

Removing a Slave Track from a VCA Group

You can remove an individual slave track from a VCA group, which commits the VCA automation to that track, leaving the VCA Master and the other slave tracks untouched. The coalesced slave track plays back exactly as it did when it was in the VCA group.

To coalesce automation from a VCA Master to an individual slave track:

1 Do one of the following:

- Choose Modify Groups from the Group List menu.
- Click the Group ID indicator on the track and choose Modify.
- Right-click the Group name in the Group List and choose Modify.

2 In the Groups dialog, select the VCA-controlled group that includes the slave track.

3 In the Groups dialog, click Tracks and remove the slave track from the group.

4 Click OK.

The slave track is removed from the VCA group, and the composite Volume level and Mute state are coalesced to the track.

Duplicating a Slave Track

When you duplicate a slave track without duplicating its group assignments, the VCA automation is coalesced to the duplicate track. The coalesced duplicate plays back exactly as if it were in the VCA group.

To coalesce automation from a VCA Master to a single slave track by duplicating the track:

1 Select the slave track whose automation you want to coalesce.

2 Choose Track > Duplicate.

3 In the Duplicate Track dialog, deselect Group Assignments.

4 Click OK.

The composite Volume level and Mute state are coalesced to the duplicate track. The original slave track is preserved, and the VCA group is unchanged.

Coalescing Automation Across an Edit Selection

You can commit VCA automation across an Edit selection in a VCA Master track, without committing the automation on the entire length of the track.

To coalesce automation in an Edit selection on a VCA Master track:

1 Select the VCA Master track whose automation you want to coalesce.

2 Make an Edit selection in the VCA Master track that includes the range of automation you want to coalesce.

3 Do one of the following:

- Hold Start (Windows) or Control (Mac) and choose Track > Coalesce VCA Master Automation.

– or –

- Hold Start (Windows) or Control (Mac) and Right-click the VCA Master track name and choose Coalesce VCA Master Automation.

The composite Volume level and Mute state are committed to each of the slave tracks over the Edit selection. The VCA Master Volume is set to zero, the VCA Mute state is set to unmuted, and any automation on the VCA Master is cleared for the selected area only.

chapter 6

Surround Features

Pro Tools with Complete Production Toolkit 2 supports surround mixing. Pro Tools supports mixing in the following multichannel (greater than stereo) formats: LCR, Quad, LCRS, 5.0, 5.1, 6.0, 6.1, 7.0, 7.0 SDDS, 7.1, and 7.1 SDDS.

Pro Tools with the Complete Production Toolkit2 option and 003, 003 Rack, 003 Rack+, Digi 002, or Digi 002 Rack can monitor discrete mixing in surround up to 7.1.

Pro Tools with the Complete Production Toolkit 2 option and Mbox Pro or Mbox 2 Pro can only monitor discrete mixing in surround up to 5.1.

With Complete Production Toolkit 2, you can open surround sessions on any Pro Tools system. Use the Neyrinck SoundCode Stereo down mixer plug-in for monitoring surround sessions in stereo with audio interfaces that have fewer than six outputs. For more information, see the *SoundCode Stereo Guide*.

⚠ *Low Latency Monitoring (003 and 002 family interfaces only) is unavailable in surround sessions.*

For information on fundamental surround concepts, see the Pro Tools Sync & Surround Concepts Guide.

Pro Tools Audio Connections for 5.1 Mixing

While all 5.1 mixing formats provide the same speaker arrangement, there are three primary standards in use for the track layout of the individual channels that comprise the 5.1-format multichannel mix.

In the following table, it is assumed that surround channels are assigned to outputs 1–6 of a Pro Tools audio interface. Use channels 7–8 to monitor a stereo mix for a stereo version, or for cue mixes and monitoring.

Table 1. Track Layouts for 5.1 Formats

Formats	Track Layout					
	1	2	3	4	5	6
Film (Pro Tools default) or C24	L	C	R	Ls	Rs	LFE
SMPTE/ITU for Dolby Digital (AC3) or Control|24	L	R	C	LFE	Ls	Rs
DTS or ProControl	L	R	Ls	Rs	C	LFE

To connect your audio interfaces for 5.1 format mixing and monitoring:

1 Determine the 5.1 format and track layout you want to use.

2 Connect the output channels of your audio interface to the corresponding input channels of your monitoring system according to the assignments listed in Table 1 on page 67.

If you use an Pro Tools control surface, see its guide for more information.

Configuring Pro Tools for Multichannel Sessions

Configuring Pro Tools and sessions for multichannel mixing can be done in any (or all) of the ways described in this section.

New Sessions

You can create a new session and choose a surround mix I/O Settings file as the *default* I/O Setup. See "New Sessions and I/O Settings" on page 68.

Remixing Sessions in Surround (Importing Multichannel I/O Setups)

By creating or importing a surround mix I/O Settings file in the I/O Setup dialog, multichannel paths can be made available in any stereo (or other format) session. You can then reassign track routing from the original stereo paths to multichannel paths. Inactive and active paths simplify reassignment. See "Importing Multichannel I/O Setups" on page 70.

Custom Multichannel Paths

You can customize and redefine existing paths in the I/O Setup dialog. For more information, see "Custom Multichannel Paths" on page 71.

Importing Session Data

By using the Import Session Data command (File > Import > Session Data), you can import tracks and media from other sessions plus their associated paths and track assignments. After importing session data, you can use the I/O Setup dialog to configure main and sub-paths for the requirements of the session.

For more information, see the *Pro Tools Reference Guide*.

New Sessions and I/O Settings

When you create a new session, you can specify a surround format that you want to use as your I/O Setup. Default path configurations are provided as I/O Settings files, for stereo and surround mixing.

Once you create the new session, you can create and import tracks, import audio, and assign signal routing to set up your mix.

To create a new session for multichannel mixing:

1 Choose File > New Session.

2 Select the Create Blank Session option.

3 Select the Audio File Type, Sample Rate, and Bit Depth as desired.

New Session dialog, 5.1 Film Mix I/O setting selected

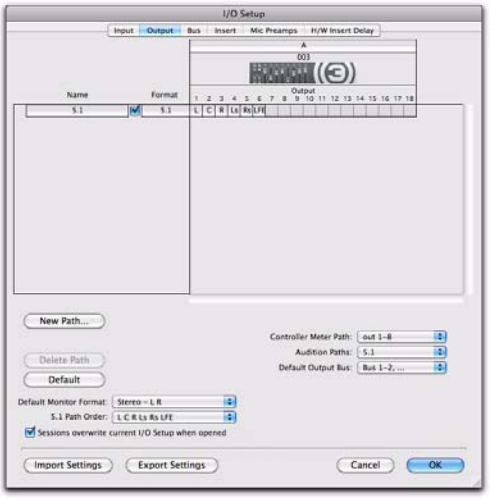
4 From the I/O Settings menu, select one of the following options:

- 5.1 Film Mix
- SMPTE/ITU
- DTS/ProControl Monitoring

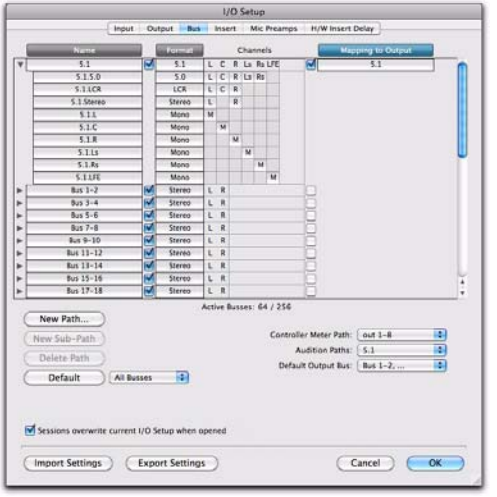
5 Click OK.

6 In the Save dialog, name the session, navigate to the location where you want to save the new session, and click Save.

The surround presets preconfigure the I/O Setup for the new session with default 5.1 format output paths and main and sub-paths for output busses.



Standard 5.1 format (film) output paths



Standard 5.1 format (film) output bus paths

Surround Mix Settings Files

The surround mix I/O Settings provide output and bus paths for three specific track layout standards in the new session. (For information on inputs and insert paths, see "Default Input and Insert Paths with 5.1 Settings" on page 70.)

Settings Files and Track Layouts

5.1 Settings	Track Layout
Film (Pro Tools Standard, and C24 Monitoring)	L C R Ls Rs LFE
SMPTE/ITU (Control|24 Monitoring)	L R C LFE Ls Rs
DTS (ProControl Monitoring)	L R Ls Rs C LFE

All three 5.1 format I/O Settings (Film, SMPTE/ITU, or DTS) provide the following default output and bus paths for the new session:

Default 5.1 Output Paths

- One 5.1 main output path.

Default 5.1 Output Bus Paths

- One 5.1 main output bus path, with subpaths for 5.0 (no LFE), LCR, Left/Right (stereo), and mono subpaths for each 5.1 channel.

Default Input and Insert Paths with 5.1 Settings

The 5.1 Mix settings files provide default stereo main paths and mono sub-paths for inputs and inserts. If you need multichannel input paths or inserts, you can create them in the I/O Setup dialog (see "Custom Multichannel Paths" on page 71).

Importing Multichannel I/O Setups

The I/O Setup dialog can import and export settings files. Importing I/O Setup settings files is useful when you want to remix a stereo session in surround. You can also use this feature to prepare a session for transfer to a different Pro Tools system, or to simply save and exchange I/O Settings.

To import a multichannel I/O Setup settings file:

1 Choose Setup > I/O.

2 Select the page of the I/O Setup for which you want to import I/O Settings (such as the Output page).

3 Click Import Settings.

4 Select the settings file (.pio) to import and click Open.

5 If the current session has existing path definitions that do not match those in the imported settings file, Pro Tools asks whether you want to delete the existing paths or retain them and add the imported settings to your session.

- Click No to add new paths to your current I/O Setup configuration.
- Click Yes to replace your current I/O Setup configuration with the imported settings.

6 Click OK to close the I/O Setup.

Exporting I/O Settings

Exporting I/O Setup settings files lets you build a library of multichannel setups for different projects.

To export an I/O Setup settings file:

1 Choose Setup > I/O.

2 Click Export Settings.

3 Name and Save your current I/O Settings.

Custom Multichannel Paths

The I/O Setup dialog lets you create and customize signal paths for any supported multichannel mixing format.

Multichannel paths and sub-paths are assigned to inputs, outputs or internal busses in the Channel Grid. When you select a preset 5.1 I/O Settings file, default layout for the corresponding multichannel format paths you create will match the selected format's track layout.

In addition, the I/O Setup dialog, like the Main page of the Hardware Setup dialog, provides controls for routing the physical inputs and outputs on your audio interface to available inputs and outputs in Pro Tools.

When creating 5.1 format paths, you can specify the default track layout. See "Default Path Order for 5.1 Tracks" on page 73.

Reassigning Channels

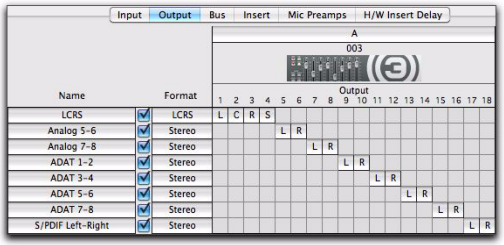
The I/O Setup dialog and its Channel Grid also let you assign Pro Tools Output channels to physical outputs on your audio interface. This is especially useful to route channels within a multichannel path, without having to re-patch your audio interfaces.

You can assign paths to any required configuration, limited only by your systems resources, and the I/O Setup dialog requirements for channel overlapping and naming.

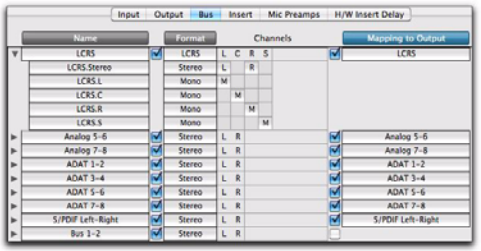
See also "Example Paths and Signal Routing for a Surround Mix" on page 83.

Example LCRS Setup

The following example shows one possible way to configure the I/O Setup dialog to mix in 4-channel LCRS format, with a 003.



Example LCRS output paths



Example LCRS output bus main and sub-paths

For additional I/O Setup information, see the Pro Tools Reference Guide.

To define an LCRS path:

1 Choose Setup > I/O, and click the Output tab.

2 Click New Path.

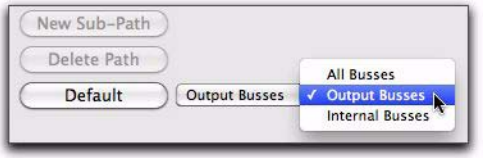
3 Select LCRS from the Path Format selector.

4 Name the path LCRS.

5 In the Channel Grid, click in the box below the first (left-most) audio interface channel for the path. Pro Tools automatically fills up the adjacent units to the right. If you click in the LCRS row under channel 1, the LCRS path is assigned to channels 1–4.

6 Select the Bus tab.

7 Select Output Busses from the Default selector.



Selecting Output Busses from the Default selector

8 Click the Default button.

9 Click OK to close the I/O Setup.

5.1 Tracks, Formats, Assignments, and Metering

Path definitions in I/O Setup determine how audio is routed through, and metered on, your audio interfaces.

Pro Tools internal (on-screen) metering of 5.1 format paths always follows the Film track layout:

L C R Ls Rs LFE

Pro Tools track layout of 5.1 format audio tracks in the Edit window also conforms to the Film layout (arranged top to bottom). See the illustration "5.1 Track Layouts, Routing, and Metering" on page 74.

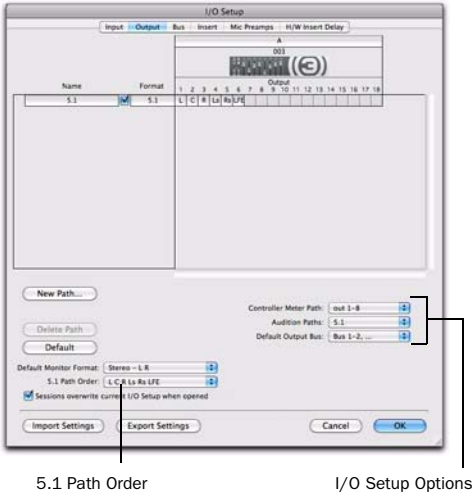
In the I/O Setup dialog, you can route these signals out of your audio interfaces according to any track layout (such as DTS or SMPTE/ITU).

To assign channels in a path:

- Click and drag a channel to a new valid location in the Grid. Other channel assignments will move (shuffle) to accommodate dragged channels.

Default I/O Selectors in I/O Setup

The Output page and the Bus page of the I/O Setup provide selectors for setting I/O defaults in your multichannel sessions.



Default selectors in the I/O Setup dialog

5.1 Path Order Selects the default track layout (or, path order) for new 5.1 format (six-channel) paths.

Controller Meter Path Selects the path that will be shown in Pro Tools control surface output meters. See "5.1 Tracks, Formats, Assignments, and Metering" on page 72 for more information.

Audition Paths Selects the monitoring path for previewing audio in the Region List, Import Audio dialogs, and DigiBase. Only outputs on your primary interface can be used as your Audition path.

Default Output Bus Selects the default output bus path for all new tracks, for each supported track format.

The New Track Default Output can be set to bus paths, as well as output paths.

Default Path Order for 5.1 Tracks

You can specify the default track layout for all new 5.1 format paths you create.

To choose a new default 5.1-format path order (track layout):

1 Choose Setup > I/O.

2 Click the Output tab.

3 Use the 5.1 Default Path Order setting to select the track layout you want (Film, SMPTE/ITU, or DTS/ProControl Monitoring.

5.1 Track Layouts, Routing, and Metering

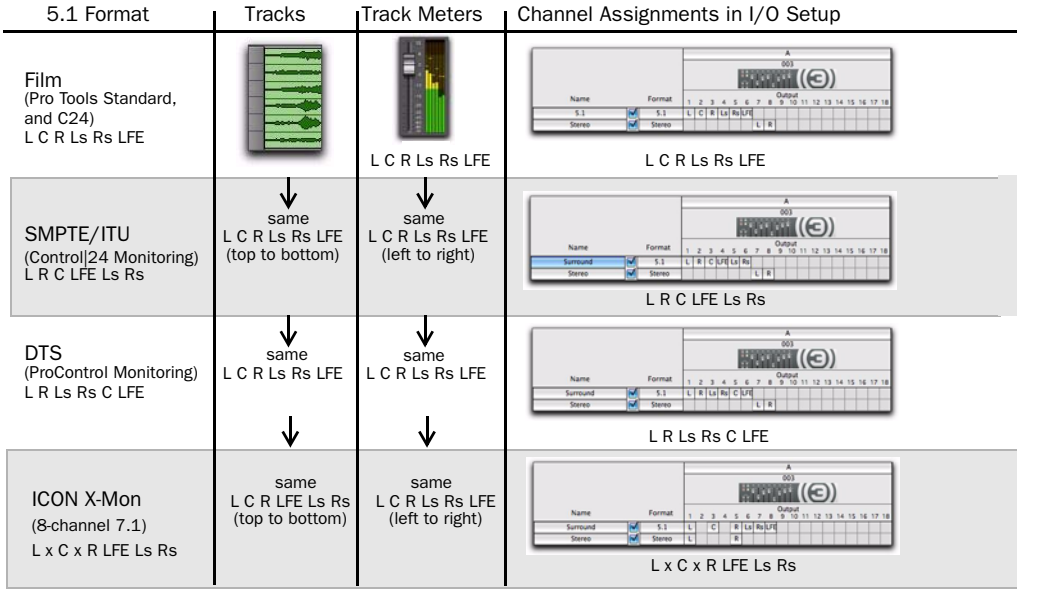


Figure 1. Track layout of different 5.1 formats

Routing Audio for Surround Mixing

Surround sessions typically include a combination of mono, stereo, and multichannel audio, Auxiliary Input, Master Fader, and Instrument tracks, and inserts and busses.

Once the appropriate I/O Setup has been imported or configured, audio, Auxiliary Input, Master Fader, and Instrument tracks can be mixed in multichannel for surround using Pro Tools mixing features.

Multichannel I/O and signal routing is determined by the paths defined in the I/O Setup dialog.

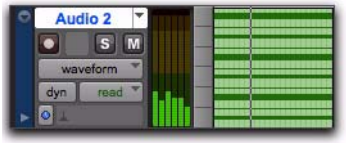
If you want independent volume, mute, and solo controls for surround monitoring, you may want to invest in external surround monitoring hardware such as an C|24™.

Multichannel Audio Tracks

Multichannel audio tracks contain an individual channel for each signal in the track (for example, a 5.1 track would have six channels for left, center, right, left surround, right surround, and LFE).

Multichannel audio tracks can be:

- Recorded directly into Pro Tools, using multiple microphones or microphone arrays, or routed to appropriate multichannel Pro Tools Input paths
- Imported from other Pro Tools sessions
- Edited, processed, and mixed in combination with mono and stereo tracks



5.1 format multichannel audio track

5.1 format audio files and tracks conform to the Film track layout standard. Regardless of path assignments in the I/O Setup dialog, all 5.1 format audio tracks and meters follow the Film standard track layout:

L C R Ls Rs LFE

Multichannel audio tracks are not required to mix in multichannel formats. Mono, stereo, and all supported track formats can be mixed using Pro Tools track outputs and sends (see "Multichannel Signal Routing" on page 77).

Placing Audio in Multichannel Tracks

You can drag audio files and regions from DigiBase browsers, the Region List, Windows Explorer, or Mac Finder, or from other tracks, to place them in multichannel audio tracks.

To do so, the number of channels being dragged must match the destination track format. For example, you can only drag a stereo pair or two mono regions onto a stereo audio track. Similarly, you can only place audio into an LCR track when you have selected three regions. With 5.1 tracks, you must select six mono files or regions.

⚠ *When dragged into a multichannel track, audio files are placed from top to bottom in the exact order that they appear in the Region List or playlist from which they came (Top to Bottom must be selected for in the Region List menu > Timeline Drop Order). For this reason, you may want to rename audio files before dragging them, so that they are placed in the preferred order. Rename them so that sorting them By Region Name in the Region List results in the preferred order. (For example, with a 5.1-format track, you can rename the audio tracks so that the arrangement of the tracks corresponds to L, C, R, Ls, Rs, and LFE.)*

Solo, Mute, and Gain in Multichannel Tracks and Paths

Stereo and multichannel tracks consist of multiple audio signals, linked together. By default, multichannel tracks are linked and are controlled by a single channel fader, and solo and mute switches.

For discrete control of signals, multichannel tracks can be converted into individual mono tracks. For discrete level and phase adjustment, you can insert and unlink a multi-mono Trim plug-in. Both of these techniques are explained below.

⚠ *Once converted to mono, multichannel tracks cannot be relinked into their original multichannel format. However, a multichannel track can be reassembled by dragging the corresponding number of mono files (with the appropriate file suffixes) into a multichannel track, although some automation data may be lost. As an alternative, record the submix of the mono tracks to disk on a multichannel track.*

To convert a multichannel track into discrete mono tracks:

1 Select the multichannel track.

2 Choose Track > Split Into Mono.

To have discrete control of gain on individual channels of a multichannel track:

1 Insert a multi-mono Trim plug-in on the multichannel track.

2 Unlink the Trim plug-in by clicking the Link icon so that it is unlit.

3 Use the Channel selector to display the controls for a channel, and adjust the gain.

See "Linking and Unlinking Controls on Multi-Mono Plug-Ins" on page 80 for more.

Track and Output Formats

When you create new tracks, you specify mono, stereo, or a supported multichannel format for the new tracks.

In the Mix and Edit windows, the track format of a track's output is always visible by the number of track meters contained in its fader strip (for example, a single meter for mono tracks, a pair of meters for stereo tracks, and six meters for 5.1 tracks).

Assigning track output determines the format of that output. For example, a mono track always has a single track meter, even when assigned to a stereo output path. If that same mono track is assigned to a 5.1 output path, it's output will be split among those six output channels, depending on the position of its panner.

Changing Format

Changing the output format for a given track has several effects:

- The panner that appears in the track will change to reflect the new output format.
- It may be necessary for one or more pan related automation playlists to be created or deleted.

Because changing the output format has these effects, a warning dialog appears whenever you change the output format of a track to a format of fewer channels. Specifically, this will occur whenever automation playlists will have to be deleted.

Multiple Output Assignments and Track Format

When a track is assigned to more than one path of differing formats, the main output for that track will match the format of the assigned path with the greatest number of channels.

Multiple Outputs and Automation Playlists

When a track has multiple output assignments, Pro Tools sorts panning data appropriately for each assigned path. For example, if you assign a mono track to a stereo path and a 5.1 path simultaneously, that track will have a 5.1 panner in the Mix or Edit window. When you pan the track, Pro Tools interprets the 5.1 panning moves into stereo panning moves.

This provides a type of parallel mixing. You can create a variety of mixes of differing formats all at the same time by routing your elements to multiple paths.

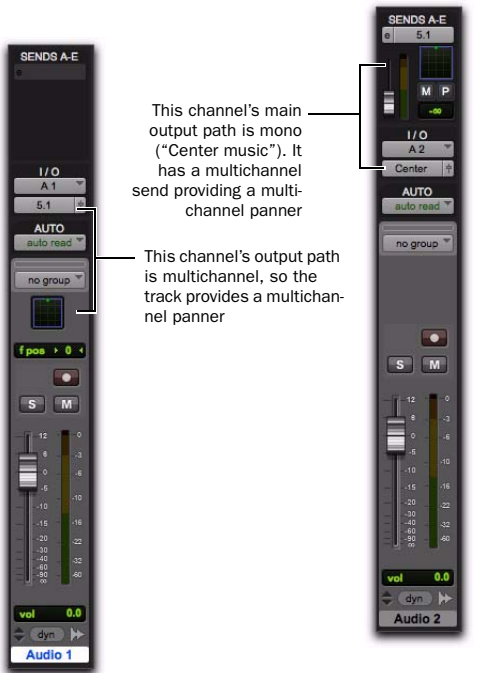
Command-Control-click (Mac) or Control-Start-click (Windows) any control in an Output window to show its automation playlist in the Edit window and view any pan automation.

Multichannel Signal Routing

To mix in a multichannel format, tracks are assigned to multichannel paths.

Tracks can be mixed in surround using the following two methods:

- By setting a track main output to a multichannel path.
- By assigning a multichannel send to route audio to a multichannel path.



Two different ways to configure tracks for multichannel mixing

Multichannel Track Outputs

Tracks can be routed to multichannel output or bus paths using the track's Output Path selector. This provides a multichannel panner and meter in the Mix and Edit window I/O View.

Additional output assignments can be added by Start-clicking (Windows) or Control-clicking (Mac) the Selector tool and assigning another path.

Multichannel Sends

All track formats, including mono and stereo, let you assign one or more multichannel sends. This provides a multichannel panner in the Sends View. Sends are also useful to bus tracks for multichannel plug-in processing.

Figure 2 shows a mono audio track with a 5.1 (6-channel) send (View > Sends A–E > Send A).

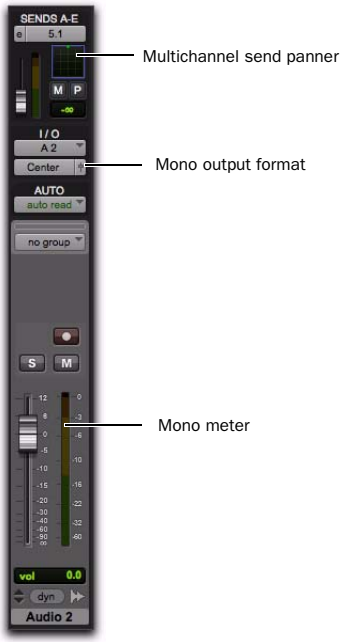


Figure 2. A mono audio track with a mono output format and a multichannel send

Pro Tools bussing and submixing features are available for all channel formats, from mono/stereo through 8-channel. For examples of multichannel monitoring, effects processing, and bussing, see "Mixing with Paths and Sub-Paths" on page 81. For mono and stereo mix examples, see the *Pro Tools Reference Guide*.

Multichannel Auxiliary Inputs and Master Faders

A multichannel Auxiliary Input or Master Fader is used as a return for the multichannel bus. Sends are useful when you need to create an additional, independent mix simultaneously (perhaps of a distinct format), requiring dedicated fader, mute, solo, and automation controls.

You can assign Master Faders to main and sub-paths. Main paths must match the format of the Master Fader, and only one Master Fader can be active and assigned to any single (active) main or sub-path. A Master Fader cannot be assigned to a sub-path if its associated main path is already assigned on another Master Fader.

Multichannel Instrument Tracks

Multichannel tracks can be used to monitor and route multichannel instrument plug-ins or multichannel external MIDI instruments.

Mono, Multi-Mono and Multichannel Plug-Ins

Plug-ins can be used in mono, multi-mono, or multichannel formats.

For information about mono, stereo, and mono-in/stereo-out plug-ins, see the *Pro Tools Reference Guide*.

Multi-Mono Plug-Ins Are designed for use on stereo or greater-than-stereo multichannel tracks. Multi-mono plug-ins are useful, or required, in the following situations:

- When a plug-in does not involve multichannel correlated processing (for example, when applying EQ to select sides of a multichannel signal)
- When you need to adjust signals within the multichannel track independently
- When a plug-in does not support multichannel formats

When a multi-mono plug-in is first inserted on a multichannel track, the plug-in controls are linked. You can unlink them for independent adjustment. See “Linking and Unlinking Controls on Multi-Mono Plug-Ins” on page 80 for more information.

Multi-mono plugs-ins can also be inserted on stereo tracks, to apply unlinked plug-ins on the left and right channels.

Multichannel Plug-Ins Are designed for use on stereo and multichannel tracks that require correlated processing, including stereo and multichannel limiting, compression, and similar effects.

Linking and Unlinking Controls on Multi-Mono Plug-Ins

When a multi-mono plug-in is used on a multi-channel track of more than two channels, the controls are normally linked. Adjusting the Gain control on one channel, for example, will adjust it for all channels.

If necessary, you can unlink plug-in controls on specific channels of a track and edit them independently. You can also selectively link the controls of specific channels.

For example, to apply equal filter cutoffs to the Ls and Rs (surround) channels in a 5.1 mix, you could link enable just those channels in an unlinked, multi-mono EQ plug-in. Adjusting the controls in the plug-in window for either channel (Ls or Rs) adjusts the other, linked channel as well.

Channel selector and Link controls

Channel Selector Accesses a specific channel within a multichannel track for plug-in parameter editing. This menu appears only on multi-mono plug-ins inserted on tracks with more than two channels.

Master Link Button When enabled, links the controls on all channels of a multi-mono plug-in so that they can be adjusted in tandem.

Link Enable Buttons Let you selectively link the controls of specific channels of a multi-mono plug-in. Each square represents a speaker channel. The Master Link button must be disabled to use the Link Enable buttons.

To unlink controls on a multi-mono plug-in:

- Deselect the Master Link button. It is lit when linked, unlit when unlinked.

To access controls for a specific channel:

- Select the channel from the Channel selector.

To open a plug-in window for all channels of a multi-mono plug-in:

- Alt-click (Windows) or Option-click (Mac) the Channel selector.

To link the controls of specific channels:

1 Deselect the Master Link button if it is not already deselected.

2 Click the Link Enable buttons for the channels whose controls you want to link.

For more information on using plug-ins, see the Pro Tools Reference Guide.

Paths in Surround Mixes

Because Pro Tools provides a flexible routing and submixing environment, you can maximize your system's available resources by first identifying the elements that you want to pan dynamically and those that can be placed in certain channels only (see "Mixing with Paths and Sub-Paths" on page 81).

Once you have identified these elements in your session, you can use a combination of main and sub-path assignments, and multichannel panning.

Mixing with Paths and Sub-Paths

It is rare that every track needs to be "flown" (actively panned in between more than a pair of speakers). In most situations, certain elements are placed in certain speakers and remain there, providing the foundation for a mix.

Figure 3 on page 82 illustrates an example of how panning and signal routing can be combined in a multichannel mix. The following sections describe how to organize your session and signal routing to maximize the available resources.

See "Extending Stereo Mixing Conventions to Surround Mixing" on page 84 for related information.

When to Assign Multichannel Outputs

- Assign 5.1 paths only to those tracks that need to be panned to all six channels.

For example, a sound effects track with a jet flyover should be assigned a 5.1 path to be able to fly the sound from front-to-back. In a music mix, you can fly a solo instrument or make a synth pad swirl around the room as a special effect.

Elements that need to be heard in all speakers simultaneously can also be assigned to the multichannel output, whether or not they require active panning in the sound field.

When to Use Sub-Paths

- To help simplify large sessions, use sub-paths to route *static* (or, stationary) elements directly to the output channel or channels.

For example, film dialog is often mixed to the center channel to anchor this essential sound element to the picture. Instead of assigning a six-channel panner to dialog tracks and panning the tracks to the center speaker only, you can route the dialog track's main output to a mono (Center) sub-path.

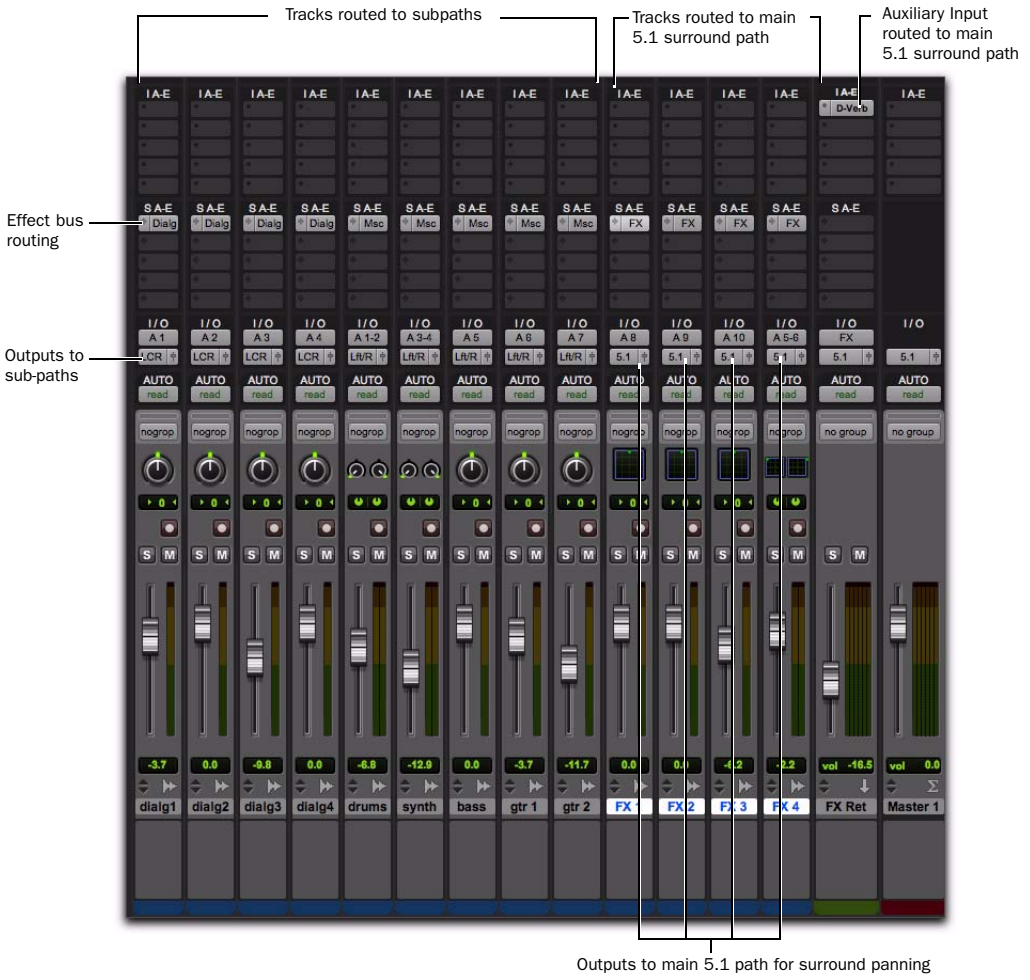


Figure 3. Using signal routing and sub-paths to mix in surround

Example Paths and Signal Routing for a Surround Mix

The examples that follow show how Auxiliary Inputs, Master Faders, and other Pro Tools signal routing features can be used for stem mixes, submixes, and similar project needs.

In these examples, music and effects are being mixed for a trailer, in 5.1 surround. Separate stem mixes (for music and for effects) are to be mastered to 8-track MDM.

Example Multichannel Paths

Signal routing is the key element in any Pro Tools surround session. Signal routing is configured and defined in the I/O Setup dialog.

Example Output Paths

Figure 4 shows output paths defined in the I/O Setup dialog of an example session that was created using a 003.

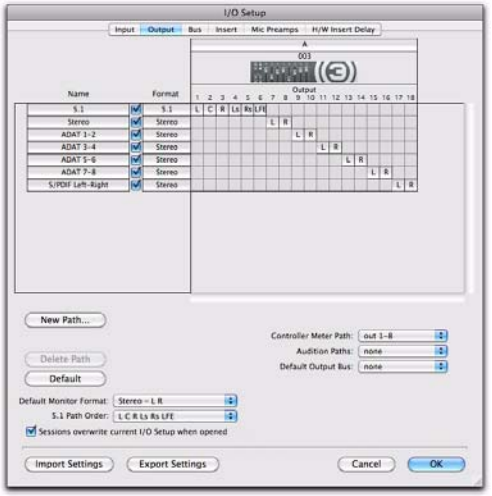


Figure 4. I/O Setup, example output paths

Example Bus Paths

Figure 5 shows example bus paths.

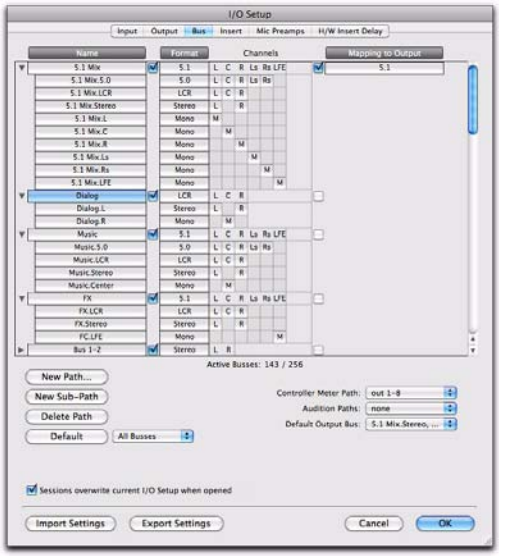


Figure 5. I/O Setup, example bus paths

Output bus main paths and sub-paths have been defined for the 5.1 Mix.

An LCR format internal mix bus path (“Dialog”) and two 5.1 format paths (“Music” and “FX”) have been defined, each with several sub-paths.

Example Sub-Paths

Sub-paths let you route to selective channels within the multichannel surround output busses. In Figure 6, the Mix 5.1 bus has several sub-paths that show this.

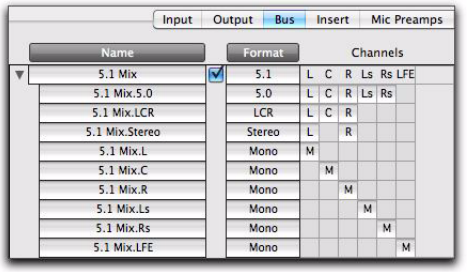


Figure 6. I/O Setup, example sub-paths

5.0 Sub-Path The 5.0 path is a 5-channel sub-path. Use this type of sub-path routing to conserve mixing resources with tracks you want to keep out of the LFE channel.

LFE Path An LFE sub-path provides a discrete mono path for the LFE channel.

Signal Routing Examples

The following examples show how main and sub-paths can be used, using an example session consisting of a 5.1 main mix, with music and effects stems (or submixes).

Submix Stem Examples

Figure 7 on page 85 below shows a routing configuration for an effects submix. Two tracks are routed to stereo bus sub-paths, while others are assigned to an LCR and a mono bus sub-path. Two tracks (one mono, one stereo) are assigned to multichannel busses for surround panning. A 5.1 Auxiliary Input assigned to the FX main bus path serves as a submixer.

Extending Stereo Mixing Conventions to Surround Mixing

Stereo mixing sets the precedent for active and static panning, and surround mixing can benefit from the same basic principles. Figure 8 on page 85 below shows a routing configuration for music tracks.

Most of the music tracks in this example are routed to the front left/right channels, using a stereo sub-path. A 5.1 Auxiliary Input controls the bus and stem output.

Multiple Output Assignments

Multiple output assignments make it possible to configure a number of multi-format mixes. For example, you can assign an additional stereo output to tracks and create a stereo mix at the same time as a 5.1 mix.

Panning a sound back-and-forth between the left and right speakers is best used as a special effect. In a typical music mix, the basic tracks are placed in the stereo sound field and remain there.

Surround mixes can become incoherent if too many elements are continuously moving, For special effects, some tracks can be panned *dynamically,* bouncing between speakers or sweeping from one side to the other.

Figure 7. FX stem

Figure 8. Music stem

LFE Examples

LFE tracks and other audio can contribute to the LFE output in two ways:

- Using the LFE fader in Output windows. This LFE signal is post-fader.

  – or –

- Using a custom sub-path to route channels discretely.

Figure 9 shows a channel Output window, sending and metering to the LFE channel.

Figure 9. LFE contribution from a stereo output

Using the LFE fader, you can add any amount of any multichannel path to the overall LFE output. In the above example, the track's Center percentage has been turned off, and the LFE fader has been raised to route it to the LFE channel.

Figure 10 shows how a "traditional" LFE track can be routed to only the LFE channel. This example uses a custom-defined LFE sub-path to the FX main bus path.

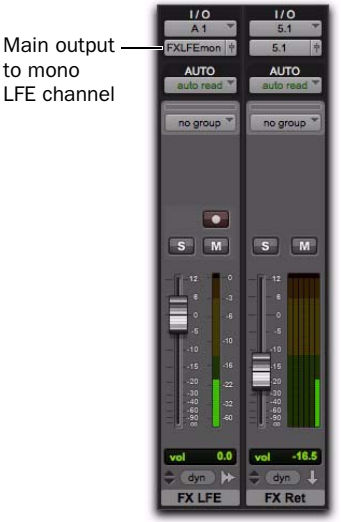


Figure 10. Discrete LFE routing

LFE faders can follow Mix and Edit Groups.

For instructions on how to create a sub-path, see "Custom Multichannel Paths" on page 71.

LFE and Filtering

Pro Tools applies no filtering to LFE signals. Some delivery requirements may require filtering for the LFE track. For more information, see the *Pro Tools Sync & Surround Concepts Guide*.

Introduction to Pro Tools Surround Panning

There are four different track panning methods available:

- In the Edit window, using the reduced-height Panner Grid in the I/O View
- In the Mix window, using the reduced-height Panner Grid
- In the Output window, using the full-size Panner Grid
- Through pan automation editing

Control surfaces provide additional panning options. Refer to the documentation for your control surface for more information.

Mix and Edit Window Panner Grids

In the Mix and Edit window, multichannel Panner Grids are displayed on tracks that have multichannel track or send output assignments.

To pan from the Mix or Edit window:

1 To pan in the Edit window, make sure I/O View is being shown (View > Edit Window > I/O). Panner Grids are always displayed in Mix window tracks that support panning.

2 Begin playback.

3 Click and drag on the appropriate multichannel track's Panner Grid in the Mix or Edit windows.

Panning in the Track Grid

The Pan Location cursor follows your movements as long as you hold down the mouse button. Movements are scaled so that, once you click to "grab" the Pan Location cursor, you do not need to limit your movements to the small Track Grid area.

Pan Location Cursor Color while Automating

The Pan Location cursor is green when the track is in Automation Read mode, red in an Automation Touch, Latch, Touch/Latch, or Write modes, and yellow in Automation Off (or Automation Suspend) mode.

In Trim mode, the Volume fader and LFE fader are yellow.

Output windows provide additional features and controls (and a much larger Grid). For details, see "Output Windows" on page 88.

Output Windows

Output windows provide panning controls (called panners), as well as standard Pro Tools controls, for tracks of all mix formats (from 3-channel LCR through 8-channel 7.1).

For information on Output window standard controls, see “Standard Controls” on page 88. For information on Output window panning controls, see “Surround Panner Controls” on page 89.

Some of the features of Output windows include:

- X/Y (joystick-style) panning
- 3-Knob panning
- Full Divergence and Center Percentage control
- AutoGlide
- LFE feed
- Multichannel meters
- Pro Tools target window support

Multiple panners can be opened simultaneously, or a single window can display the current panner.

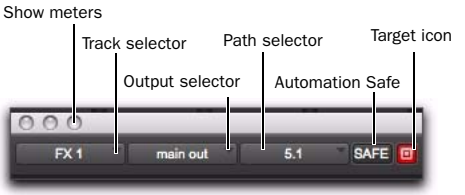
To open an Output window:

▪ Click the Output Window button (it’s the small fader at the right edge of the Output selector for a track in the Mix or Edit window (I/O View).

Opening a multichannel Output window

Standard Controls

All Output windows provide standard Pro Tools controls for routing, path assignment and other track features. These controls are located at the top of all Output, Send, Insert, and Plug-In windows. Some controls are specific to the type of window.



Panner Control section

Track Fader, Solo, Mute, and Auto

All Output windows provide track volume and mute controls. You can adjust and automate track volume, or mute, directly using these controls. The larger fader and Mute button are equivalent to those in the Pro Tools Mix window.

Surround Panner Controls

When assigned to tracks or paths with four or more channels, the Output window provides an X/Y Grid for surround panning. The speakers associated with the panner's multichannel format are displayed in their relative positions outside the Panner Grid. These speakers are also used as Snap Pan to Speaker controls.

This section identifies all the controls and features found in Pro Tools multichannel panners.

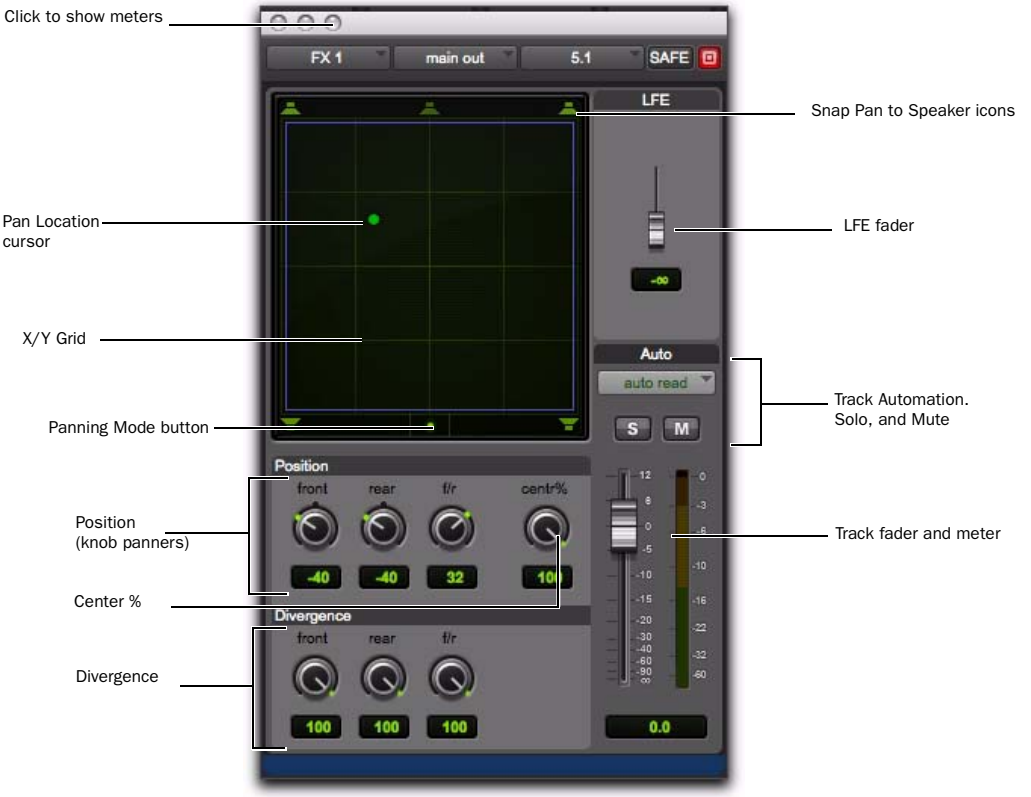
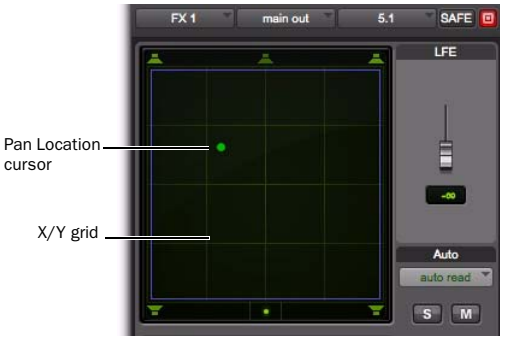


Figure 11. Output window with a 5.1-format multichannel panner

The X/Y Grid and Pan Location Cursor

The X/Y Grid is where multichannel panning information is input and displayed. You can input pan information using X/Y mode, 3-Knob mode, or by entering numeric values in the Position data fields. You can also edit pan automation graphically in the Edit window.



X/Y Grid and Pan Location cursor

Multichannel panners default to X/Y mode. In X/Y mode, the track's current pan position is represented by a green dot. This dot is the Pan Location cursor, and its color indicates track automation status using standard Pro Tools colors:

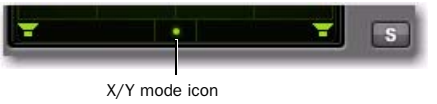
Green The track is in automation Read mode.

Red The track is in automation Write, Touch, Latch, or Touch/Latch mode.

Yellow The track is in automation Off mode (or Automation Suspend) mode.

Panning Mode Button

This button, located below the X/Y Grid, provides access to Surround panning modes (see "Panning Modes" on page 92).



Panner Mode button set to X/Y mode

Position Controls

The Position controls let you set the positions of the panner.

Position and Center % controls

Front Displays and controls the current front X-axis (left/right) position of the panner.

Rear Displays and controls the current rear X-axis (left/right) position of the panner. In default X/Y Panning mode, Rear is linked to Front position and cannot be controlled independently.

F/R (Front/Rear) Displays and controls the current Y-axis position of the panner.

Center % Control

Center % controls how much of the signal is routed to the center speaker. This lets you mix a track to the front with a phantom center (0% Center value) or to three-channel (LCR) when panning front.

Divergence Controls

Divergence determines the width of the panned signal with respect to neighboring speakers. (For more information, see the *Pro Tools Sync & Surround Concepts Guide*). There are three Divergence controls:

Front, Rear, and F/R Divergence Provide separate, automatable divergence control over front speakers, rear speakers, and between front/rear, respectively.

Divergence controls

For examples of how divergence settings affect output panning, see "Divergence and Center Percentage" on page 95.

Snap Pan to Speaker Icons

The Snap Pan to Speaker icons let you force the panner to the speaker's location. For example, clicking on the upper left speaker moves the Pan Location cursor to the upper left corner of the X/Y Grid.

LFE Fader

The LFE fader is only available in ".1" surround formats (5.1, 6.1, and 7.1).

LFE fader

The LFE fader determines how much of the current track's signal will be routed to the LFE channel. LFE faders in Track and Send windows can follow groups. The Pro Tools LFE channel is always full-bandwidth. For more information on how to use the LFE fader, see "LFE Faders in Multichannel Panners" on page 97.

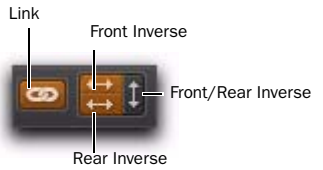
Multichannel Panner Linking

Stereo tracks with multichannel outputs provide left and right multichannel panners. The Output window provides controls to link the left and right channels for precise panning.

When you create a stereo track that is routed to a multichannel output, the following pan linkage controls are active by default:

- Link (links Left and Right pan controls)
- Front Inverse (inverts Left and Right pan control linkage across front)
- Rear Inverse (inverts Left and Right pan control linkage across rear)

The Front/Rear Inverse pan control is unlinked by default.



Stereo multichannel panner controls showing default linking

Panning Modes

The Panning Mode button provides access to four panning modes: X/Y mode, Divergence Editing, 3-Knob mode, and AutoGlide mode. Panning controls can be automated in all four modes.

Panning Mode button (X/Y mode shown)

Panning Modes

X/Y Mode Joystick-style panning by dragging the Pan Location cursor within the X/Y Speaker Grid. See "X/Y Panning" on page 92 for more information.

3-Knob Mode Point-to-point panning, between pairs of speakers. See "3-Knob Panning" on page 93 for more information.

Divergence Editing The divergence X/Y Grid can be dragged to resize the divergence boundaries. See "Divergence Editing Mode" on page 96.

AutoGlide Mode Point-to-point panning from the Pan Location cursor to a new destination over a specified AutoGlide Time. See "AutoGlide Mode" on page 94 for more information.

To enable a Panning Mode:

- Click on the Panning Mode button in the Surround Panner until the desired mode icon is displayed.

X/Y Panning

To pan in X/Y mode:

1 Click on the Panning Mode button until the X/Y mode icon is displayed.

Panner Mode button set to X/Y mode

2 Drag the Pan Location cursor, or click anywhere in the Grid and drag to pan the track. The location of the Pan Location cursor determines the pan position of the signal. For example, to pan something to the left rear speaker, move the Pan Location cursor to the lower-left corner of the Grid.

It is not necessary to click exactly on the Pan Location cursor. Clicking anywhere in the Grid will move the Pan Location cursor relative to where you click or take over with a hardware panner. Panning does not jump to the click position.

X/Y Panning

To snap the Pan Location cursor to a location in the Grid:

- Control-Shift-click (Windows) or Command-Shift-click (Mac) at the desired location in the X/Y Grid.

Grid Options and Shortcuts

Fine-Adjust Mode Hold down the Control key (Windows) or Command key (Mac) for fine adjustment of all Panner controls.

Constraining to X or Y Movement Shift-drag the Pan Location cursor to constrain its movement to the X or Y direction.

Reset to Default Alt-click (Windows) or Option-click (Mac) in the Panner Grid to reset all controls to their default position.

Snap Pan to Speaker Click one of the Snap Pan to Speaker icons to force the panner to that speaker location.

Display Automation in Edit Window Control-Start-click (Windows) or Command-Control-click (Mac) a control to display that control's playlist in the Edit window.

All Pan controls can be automated, including pan position and divergence.

3-Knob Panning

Pro Tools provides 3-Knob mode as an additional way to input pan moves.

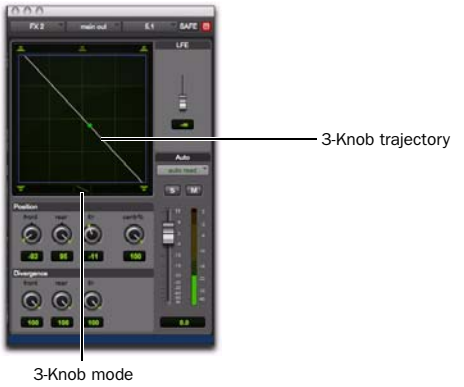
3-Knob mode lets you:

- Pan in straight lines, moving the Pan Location cursor using the Position rotary knobs with full movement of front, rear, and front-rear position.

  – and –

- Pan discretely between pairs of speakers.

For example, when panning front-left to rear-right in 3-Knob mode, audio will be heard from just those two speakers (assuming full divergence is in effect).



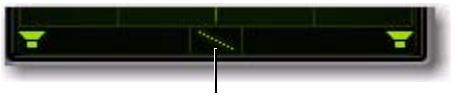
Panning and metering in 3-Knob mode

By comparison, in X/Y mode a diagonal pan may result in audio being heard in some or all channels.

The difference is that 3-Knob mode pans discretely between the front and rear position of the panning *trajectory*, while X/Y mode panning takes place in the full 360° Panning Grid. Divergence and Center Percentage are variable in both Panning modes.

To enable 3-Knob Panning mode:

- Click on the Panning Mode button until the 3-Knob mode icon is displayed.



Panner Mode button set to 3-Knob mode

The panner trajectory line appears across the Grid, extending from the front (X-axis) to the rear (Y-axis).

To pan in 3-Knob mode:

1 Adjust the Front and Rear Position knobs to set the trajectory line.

2 Rotate the Front/Rear Position knob to pan along the trajectory. The Pan Location cursor is constrained to the white trajectory line.

To change the 3-Knob trajectory angles, do one of the following:

- Drag either end point (Front or Rear) of the trajectory line.

– or –

- Adjust the Front or Rear Position controls.

To change the current trajectory position (left-to-right) and retain its current angles:

- Drag the trajectory line (not its end points) to a new position.

AutoGlide Mode

AutoGlide mode lets you quickly write Surround Panner automation by clicking new locations in the Surround Panner window, instead of manually moving the Surround Panner controls.

⚠ *When writing automation in AutoGlide mode, the Pan Location cursor cannot be dragged from its location.*

The time it takes to glide from point to point (from the Pan Location cursor to the new destination) is called the AutoGlide Time. This time is set in the Mixing Preferences page and has a range of 10 msec to 10000 msec (10 seconds).

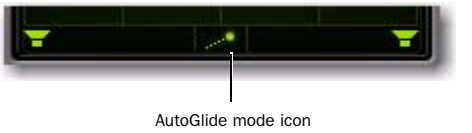
To set the AutoGlide Time

1 Choose Setup > Preferences and click the Mixing tab.

2 Set the AutoGlide Time in the Automation section.

To do an AutoGlide automation pass:

1 Click the Panning Mode button until the AutoGlide mode icon is displayed.



Panner Mode button set to AutoGlide mode

The Panning Mode button displays a slanted dotted line that ends with a filled in dot (representing a cursor) at its top right corner.

2 In the Mix or Edit window, click the Automation Mode selector and select an Automation mode for the track you want to automate.

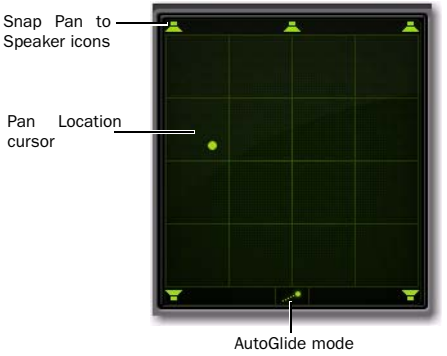
3 Press Play to begin playback.

4 Set a new destination for the cursor by doing one of the following:

- Click a Snap Pan to Speaker icon to glide to its speaker location.

– or –

- Click in the pan window to glide to a specific location in the X/Y Grid.



Panning Mode button (AutoGlide mode shown)

The Pan Location cursor will begin to move towards the new destination in the time it takes to travel the AutoGlide Time. When the new destination point is reached, a new breakpoint will be written at the new location.

5 Repeat the previous step if you want to write additional panning moves.

6 Stop the transport when finished.

Divergence and Center Percentage

The Divergence and Center Percentage controls range from 0 to 100, and can be automated. They are especially useful for ensuring audibility and coverage in large venues, and to increase clarity of voices.

Front Divergence Controls divergence between front speakers (X-axis only).

Rear Divergence Controls divergence between the rear speakers (X-axis only).

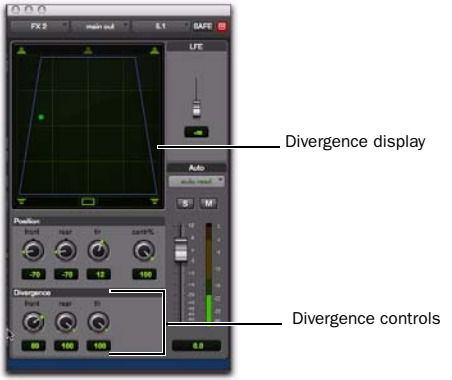
Front/Rear Divergence Controls divergence between front and rear (the Y-axis).

Center % (Percentage) Determines whether there is a *discrete* center image, a completely *phantom* center image, or a variable amount in between.

Side Center % (Percentage) Determines whether there is a *discrete* center image, a completely *phantom* center image, or a variable amount in between the right and left side channels for 7.1 and 7.0 formats.

Divergence

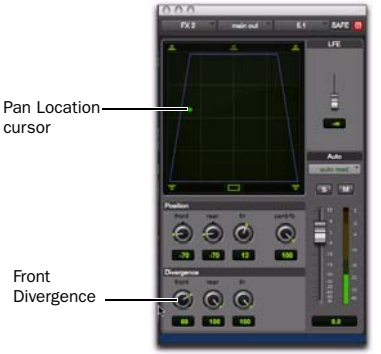
In the Panner Grid, the current divergence values are displayed using a purple outline.



Divergence display and controls

By default, Pro Tools surround panners are 100% or fully divergent, meaning that a signal that is panned completely to one speaker will only be audible in that speaker.

Lower divergence settings result in a progressively wider source signal. When Divergence is less than 100%, tracks will be routed to neighboring speakers to some degree, even when the Pan Location cursor is positioned next to a single speaker.



Front Divergence at less than 100% for wider panning

To adjust divergence:

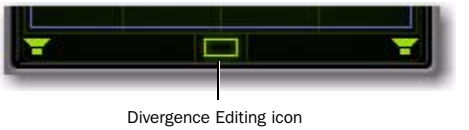
- Adjust the Front, Rear, and Front/Rear Divergence controls as necessary.

Divergence Editing Mode

In Divergence Editing mode, you can adjust the divergence boundaries by dragging directly in the Divergence Grid.

To adjust divergence graphically:

1 Click on the Panning Mode button until the Divergence Editing icon is displayed.



Panner Mode button set to Divergence Editing

2 Drag in the Grid to resize the divergence boundaries.

Center % (Percentage)

Center Percentage controls whether there is a discrete center channel for the track or a phantom center channel.

Center Percentage Example

In film and video production, the center channel often contains dialog. To enhance the clarity of dialog, it is often beneficial to keep elements such as music out of the center speaker. By reducing the Center Percentage on music tracks, music panned to the front of the sound field can be panned to only the left and right speakers, forcing them to have a variable phantom center image.

To adjust Center Percentage:

- Adjust the Center Percentage knob as appropriate.

As you reduce the Center Percentage value, the center speaker at the top of the Grid becomes less visible. At 0, the center speaker is completely invisible, reflecting the setting for fully phantom center.

Center % set to 0 (no center speaker shown)

LFE Faders in Multichannel Panners

The LFE fader controls how much of the track is sent to LFE. LFE faders are only available when a track is assigned to a path whose format supports LFE (5.1, 6.1, or 7.1).

To mix to the LFE channel:

- Adjust the LFE fader in any ".1" surround format Output window.

For general information about LFE, sub channels, and related topics, see the Pro Tools Sync & Surround Concepts Guide.

LFE Faders and Groups

Track and send LFE faders can follow Mix and Edit Groups by being enabled in the Group Attributes page in either the Create Groups or Modify Groups dialog. LFE faders can be assigned to follow groups as a global attribute or on a group by group basis.

LFE Enable

Some multichannel plug-ins, including the multichannel DigiRack Dynamics III Compressor/Limiter, provide LFE Enable. This lets you enable or bypass processing of the LFE channel if present.

LFE Enable in the multichannel DigiRack Dynamics III Compressor/Limiter

To process the LFE channel in a multichannel plug-in:

- Click to enable LFE Enable in supporting multichannel plug-ins. LFE Enable is highlighted when LFE processing is enabled, and unhighlighted when LFE processing is bypassed.

When LFE Enable is unavailable, try using the multi-mono version of the plug-in.

Pan Playlists

Multichannel panners have an automation playlist for each position and divergence control.

Pan automation can be drawn, edited, cut, copied, and pasted from the Edit window. For more information, see the Pro Tools Reference Guide.

Surround Scope Plug-In

The Surround Scope plug-in provides a 360° meter for metering multichannel paths during mixing.

5.1 Format Track Layouts

All 5.1-format meters (including those displayed in the Surround Scope meter, on tracks, and in Output windows and their Path Meter Views) are always arranged in the following order:

L C R Ls Rs LFE

For more information on Pro Tools metering, see "5.1 Tracks, Formats, Assignments, and Metering" on page 72.

To use the Surround Scope Plug-In:

- On a multichannel Master Fader, click an Insert button and select Multichannel TDM plug-in > Sound Field > Surround Scope.

Surround Scope displays output levels in both a 360° Grid, and in traditional LED meters.

For detailed information on Surround Scope, refer to the Audio Plug-Ins Guide.

chapter 7

Video Features

Complete Production Toolkit 2 enables additional session and track features for working with video in Pro Tools.

For more information on working with Pro Tools sessions and tracks, see the Pro Tools Reference Guide.

Video Track Support

Complete Production Toolkit 2 adds the following video track support to Pro Tools:

- Multiple video tracks in the Timeline
- Multiple QuickTime movies on individual video tracks
- Multiple playlists for video tracks

See the Pro Tools Reference Guide for detailed information on playlists.

Multiple Video Tracks in the Timeline

You can add multiple video tracks to the Timeline, but only one video track can be played back at a time. This track is known as the main video track.

Multiple Video Track Playlists

Playlists provide an easy way of changing back and forth between alternate versions of a video track.

You can perform all of the same operations with video playlists as you can with audio playlists, including:

- Duplicating a playlist
- Creating a playlist
- Assigning a playlist to another video track
- Renaming a playlist
- Deleting a playlist

For more information, see the Pro Tools Reference Guide.

Multiple Codecs on an Individual Video Track

A single video track can contain video regions compressed with different video codecs of the same type of video. For example, you can add QuickTime files that were compressed using multiple codecs to the same video track.

However, once the first video file has been added to a session, all additional video files added to the Timeline must have the same video frame rate as the first video file.

Support for Video Import Options

Complete Production Toolkit 2 adds the following options to Pro Tools when using the Video Import Options dialog to import video into Pro Tools:

Destination Section

Region List Imports the video file directly into the Region List, where it will be available to drag and drop into Pro Tools.

Additional Video Import Options

Gaps Between Regions When you import more than one video file into a track, they will be shuffled together by default. This option lets you indicate the number of seconds by which each video clip will be separated when imported into the video track.

Bypassing the Video Import Options Dialog

To bypass the Video Import Options dialog when importing video into Pro Tools:

- Alt-drag (Windows) or Option-drag (Mac) one or more video files from a DigiBase browser into the Region List.

Dragging Video Files from the Region List to the Timeline

You can add video files to the Timeline by dragging and dropping directly from the Region List to a video track.

To add video files to a video track by dragging them from the Region List:

1 Select one or more video files in the Region List.

2 In any Edit mode, drag the selected video files to a blank area in the Timeline (to create a new video track) or an existing video track (to place it within that track).

Video Regions

You can create video regions that function in much the same way as audio regions.

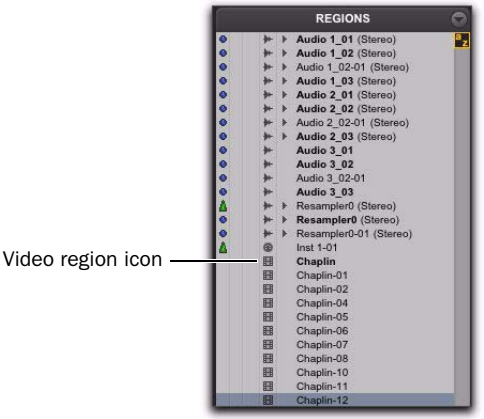
Video region as displayed in Frames View in the Timeline

A video region is a segment of video data, and can be a portion of video or an entire video file. In Pro Tools, video regions are created from QuickTime, Windows Media, or Avid video files, and can be arranged in corresponding video track playlists. Video regions can also be grouped, looped, and color coded.

Just like audio regions, video regions display in Pro Tools in the Region List or the Timeline.

Video Regions in the Region List

A video region displays in the Region List with a small video icon next to its name.



Video region as displayed in the Region List

Showing or Hiding Video Regions in the Region List

The Region List menu provides commands that let you show or hide video regions in the Region List.

To show or hide video regions in the Region List:

1 In the Edit window, click the Region List menu, and choose Show.

2 Select the Video option to show or hide video regions.

General Video Editing

Most editing operations that are available for audio regions can also be applied to video regions. This section describes all available video editing operations. Unless noted, the procedure for each video editing operation is the same as its audio editing counterpart.

Basic Video Editing Features

- Nondestructive editing
- Display of region names, region times, and other data in playlists
- Multiple video playlists
- Multiple Undo
- Video regions and video region groups in Region List
- All Edit modes
- All Edit Tools (except for Time Compression Expansion and Pencil tools)

Playing and Selecting Video Track Material

- Selecting within video frame boundaries
- Selecting and editing across multiple Video and audio tracks
- Link or unlink track and Edit selections
- Auto-scroll video tracks
- Loop playback

Working with Regions and Selections

- Capture regions
- Separate regions and Separate Grabber Tool
- Region overlap and underlap
- All trimming commands except for TCE
- Heal separated regions
- Place, align, slide, shuffle, and spot regions
- Nudging (quantized to frame boundaries)
- Shift command (moving track material back or forward in time by a specified amount)
- Quantize Region to Grid (rounds to nearest video frame)
- Replace Region command
- Cut, Copy, Paste, and Clear commands
- Special Cut, Copy, Paste, and Clear commands
  - Repeat to fill selection
  - Editing across multiple tracks
- Duplicate command
- Repeat command
- Region groups
- Region looping

Managing Regions

- Insert space
- Compact Selected (nothing happens to the video, and at least one audio track must be selected)
- All naming and displaying of region commands

Editing Caveats

The following caveats apply to video editing in Pro Tools:

- MPEG-2 video in the Timeline cannot be edited.
- If you create and enable a track group containing audio and video tracks—and any audio track has region boundaries that do not line up with video frame boundaries— you cannot tab through those region boundaries.

General Editing Operations Not Applicable to Video Regions

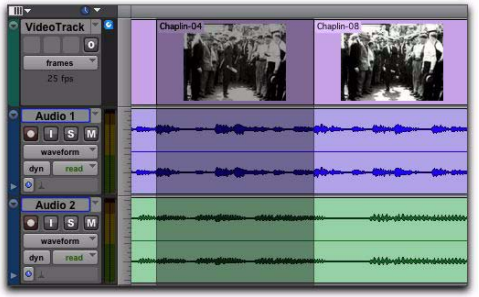
The following editing operations are applicable to audio regions, but are not applicable to video regions:

- Fades
- Mute/unmute regions
- AudioSuite plug-ins
- Waveform Repair with the Pencil tool
- Strip silence
- Consolidate regions

Selecting and Editing Across Multiple Audio and Video Tracks

You can create a selection across multiple audio and video tracks, and cut, copy, or paste audio and video simultaneously.

before



after

Selecting and editing across multiple tracks (Slip mode shown)

Audio and video that is selected and cut, copied, or pasted follow the current Edit mode.

Selecting within Video Frame Boundaries

Pro Tools does not let you select, play back, or edit a partial video frame. The following rules apply when selecting or editing video:

- When you make a selection in a video track, the selection boundaries follow the current Grid setting but round to the nearest video frame boundary, as follows:
  - If the selection includes more than half of a video frame, the full video frame is included within the selection.
  - If the selection includes less than half of a video frame, that video frame is not included in a video selection.
- When you paste a selection containing video to a video track, the insertion point automatically aligns with the closest video frame boundary.

⚠ *When you paste audio and video simultaneously, this video frame re-alignment may result in the audio not being positioned exactly where you placed it. A warning dialog displays when this occurs.*

Using the Insert Silence Command to Insert Space in Video Tracks

The Insert Silence command lets you make a selection on a track (or tracks) and insert precisely that amount of space. You can also select across video and audio tracks, and use the Insert Silence command to insert audio silence and space simultaneously.

In Shuffle mode, all video data on the track is shuffled later in the track by an amount equal to the selection. In Slip, Grid, or Spot mode, the Insert Silence command works just like the Edit > Clear command.

To insert space into a video track:

1 Make a selection in a track or tracks. The length of the selection determines the duration of the space inserted.

2 Choose Edit > Insert Silence.

Video Region Groups

You can include video regions within region groups for the following operations:

- Creating region groups
- Creating multitrack region groups (including audio tracks)
- Editing region groups
- Creating fades and crossfades for audio files in region groups
- Importing and exporting region group files

Browsing Video in the Video Universe Window

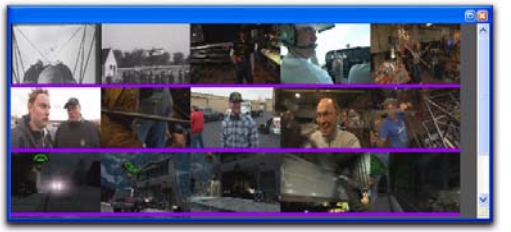
The Video Universe, lets you view, navigate, zoom, and select video regions on the main video track.

The Video Universe window displays the center video frame of each video region in the main video track. Video frames are ordered sequentially according to their order in the Timeline, and the colored strip under each frame represents the color coding for that region.

To display the Video Universe window:

1 Make sure the Video Online button in the main video track is set to online status (blue).

2 Choose Window > Video Universe.



Video Universe with video frames representing video regions on the main video track

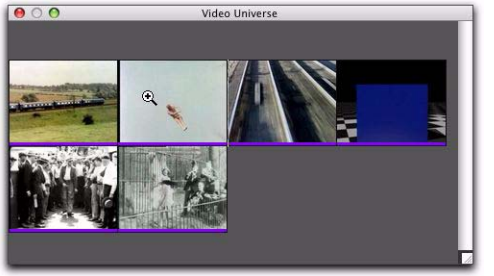
Increasing or Decreasing the Size of Video Frames

To increase or decrease the size of video frames in the Video Universe window:

- Right-click (Windows or Mac) or Control-click (Mac) anywhere in the Universe, and select Increase or Decrease.

Selecting Zoom Resolutions in the Video Universe

When you move the cursor over the top half of a video frame in the Video Universe, it displays and behaves as a zoom tool. This tool lets you zoom in on one or more video regions to fill the entire Edit window display.



Video frame with zoom tool

To use the Video Universe window to zoom video regions in the Edit window:

1 Move the cursor over the top half of any video frame until it becomes a zoom tool.

2 Do one of the following:

- To move the beginning of a video region to the far left of the Timeline while maintaining the current zoom resolution in the Edit window, click the video frame representing the region once.
- To zoom in on a video region so that it fills the entire Edit window, double-click the video frame representing the region.
- To zoom a range of selected regions so that they fill the Edit window, click and drag on the video frames that represent the regions.

Selecting Ranges in the Video Universe

When you move the cursor over the bottom half of a video frame in the Video Universe, it displays and behaves as a selector tool. This tool lets you select ranges within one or more video regions in the Edit window.

Video frame with selector tool

To use the Video Universe window to select ranges in video regions in the Edit window:

1 Move the cursor over the bottom half of any video frame until it becomes a selector tool.

2 Do one of the following:

- To place the cursor at the beginning of a video region, click the video frame representing the video region.
- To select an entire video region from start to end, double-click the video frame representing that region.
- To select one or more entire regions from start to end, drag the video frames representing the video regions.

If the Edit window does not display the selected video regions, it will automatically scroll to show the beginning of the selection.

Selecting Zoom Resolutions and Ranges Simultaneously in the Video Universe

When you move the cursor over a video frame in the Video Universe while pressing Alt (Windows) or Option (Mac), the cursor appears as a selector tool. This tool lets you zoom and select ranges simultaneously.

To use the Video Universe window to select and zoom simultaneously in the Edit window:

1 Move the cursor over any area of any video frame in the Video Universe window until it becomes a selector or zoom tool.

2 To select a range of video regions while simultaneously zooming to fill the Edit window, Alt-drag (Windows) or Option-drag (Mac) multiple video frames.

chapter 8

Included Plug-Ins

Complete Production Toolkit 2 includes the following plug-ins:

- SoundCode Stereo
- X-Form

SoundCode Stereo

The Neyrinck SoundCode Stereo plug-in is an RTAS plug-in that down mixes a surround mix to a stereo mix for Pro Tools surround compatible systems. The plug-in supports all Pro Tools surround formats (LCR, LCRS, Quad, 5.0, 5.1, 6.0, 6.1, 7.0, and 7.1).

For more information, refer to the SoundCode Stereo Guide.

X-Form

The X-Form AudioSuite plug-in is based on the Radius® algorithm from iZotope and provides the high quality time compression and expansion for music production, sound design, and audio loop applications. Use it to manipulate audio loops for tempo matching or to change vocal tracks for formant correct pitch shifting.

For more information, refer to the Audio Plug-Ins Guide.

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Avid
2001 Junipero Serra Boulevard
Daly City, CA 94014-3886 USA

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